Master Tracks Pro

The MIDI sequencer for your Macintosh.
–From Passport Designs

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Introducing Master Tracks Pro

Welcome to Master Tracks Pro for the Macintosh. Master Tracks Pro, from Passport Designs, Inc. is a powerful and versatile 64 track MIDI sequencer for the Apple Macintosh. Master Tracks Pro was designed from the ground up at Passport to offer you the most advanced, state-of-the-art multi-track MIDI sequencer available today.

Complementing a full line of software products for musicians, Master Tracks Pro represents Passport's committment to offering serious musicians the composition and performance features they want most.

Though we continue to supply sequencers for other brands of personal computers, the Macintosh is the computer of choice among many musicians, professional as well as amateur. In part, this is due to the greater processing speed and memory capacity of the Macintosh. Equally attractive are its elegant user interface, its mouse and its high resolution graphics oriented screen. Master Tracks Pro was designed to take advantage of these features, and was intended to stand out as the most sensible, affordable, and powerful MIDI composition tool available.

Master Tracks Pro gives you a free-form approach to composing music. Using as many as 64 separate MIDI tracks, you can create, combine or edit musical phrases of any length, just as you would use a word processor to write a document. You can enter these musical phrases into the 64 track MIDI recorder either by simply playing your MIDI equipped instrument in real or step time, or by entering individual notes from the computer using the mouse. Then you can easily edit, rearrange and combine the tracks in a

variety of ways to build complete songs. The program provides real-time and step-time input, song editing, step editing, a *system exclusive* utility, and keyboard control mapper in one package.

features

Master Tracks Pro includes features which let you do the following:

- Control the sequencer using an on-screen control panel that looks like a tape recorder transport control. Just click on Play, Record, Pause, Stop, Rewind or Fast–Forward to move instantaneously from measure to measure.
- Set the meter, tempo and beat independently for each measure.
- Display the elapsed time of any section of your piece.
- Record all MIDI events on the 16 possible MIDI channels simultaneously, including key velocity, after-touch, sustain, modulation and pitch wheel changes and program changes.
- Apply automatic and musically accurate error correction to your music, compensating for imperfect playing technique. A *humanize* feature can compensate for the computer's predeliction to error correct "too much" and thus create sterile, mechanical sounding performances. Humanizing adds random miniscule irregularities in note timing and velocities.
- Merge, delete, transpose, repeat and copy individual tracks, or selected portions of tracks.
- Change the note velocities, continuous MIDI data, note durations, key, tempo, meter or MIDI channel information for whole tracks or just selected regions of a track or tracks.
- Change playback tempo instantly or gradually over time. You can have Master Tracks Pro *fit time* to proportionally adjust tempos in a region to fit a given length of time — particularly useful for film and video work.

- Visually edit your compositions on a variable resolution grid which displays all MIDI events. Change a note's pitch by dragging it to a new position. Step input using the mouse or MIDI keyboard with selectable duration, velocity, articulation and MIDI channel for each note.
- Graphically plot and alter pitch bend, aftertouch, key pressure, modulation, controllers, tempos and program changes.
- Set markers anywhere in a piece and easily jump to those locations for easy editing. An *auto-rewind* feature can be set to quickly "rewind" your composition to a given point for effortless recording of multiple takes of a single track, or of subsequent tracks.
- You can set Master Tracks Pro to scroll the graphic display of your sequence as it plays it, so you can see the music on screen as you listen.
- You can incorporate your MIDI music into professional audio and video productions utilizing MIDI Song Pointer and external SMPTE synchronizers.
- A *Sysex utility* lets you control your entire MIDI setup from a single program. You can save and load voices, banks of voices, drum patterns, samples, or any other kind of MIDI System Exclusive data to and from your synthesizers, drum machines and other MIDi devices. This information can be saved on diskette along with your sequences.
- You can control Master Tracks Pro right from your MIDI keyboard rather than from the Macintosh's. Control the transport functions and the step input durations without taking your hands off your instrument.

how it works

Master Tracks Pro is similar to a fancy tape recorder, only much more capable. Like a multi-track tape machine, Master Tracks Pro lets you record one track of music at a time, playing them back later as an ensemble. You can even edit each track individually to make changes or fix mistakes — a feat which is impossible with audio tape recorders. And with a total of 64 tracks available at any given time, Master Tracks Pro offers much greater flexibility than do most tape machines.

As you may know, there are many MIDI sequencers available today. So, what makes Master Tracks Pro different? To begin with, Master Tracks uses dynamically allocated tracks. This means that the various tracks in a given musical piece can be of any length, and that length is alterable. Many other sequencers require all tracks to be the same length. Master Track Pro does not.

Secondly, Master Track Pro allows you to alter discrete portions of a track or tracks after you've made a recording. This is similar to the ability to mark and alter block of text when using a word processor. Regional selections are made in the same way with Master Tracks Pro as in other Macintosh programs, such as Macwrite or Macpaint. After marking a block of music in Master Tracks Pro, you can then modify the selected notes or MIDI events in a wide variety of ways.

You record your musical sequences, one track at a time, either in real time (as you play on a MIDI-equipped keyboard), or note by note using the mouse or midi keyboard (step entry). For step entry of notes, Master Tracks Pro provides a graphic step editor that lets you see each note on the computer's screen as you enter it. The step editor also lets you precisely edit each note or other musical event after it has been recorded, whether you've used real time or step entry to record your music.

In addition to editing individual notes, tracks as a whole can be further edited, and they can be mixed together with other tracks in a variety of ways to form compositions of various lengths — even very long pieces. Using the Master Tracks Pro's *clipboard*, you can cut and paste sections of one piece into another piece to quickly create songs based on a number of existing sequences.

the interface

Master Tracks Pro follows well established traditions for the Macintosh when it comes to using the keyboard and mouse to control the program. If you have used your Mac even a little and know your way around a few other Mac programs, you'll be able to learn Master Tracks Pro very quickly.

Master Tracks Pro's many program functions and commands are organized logically into a number of different windows where you work with your sequences. There are six

main windows:

- ► Transport window — where you control your MIDI *tape deck* by clicking on Play, Stop, Fast–Forward, etc.
- ► Sequencer window — where you you record and playback your tracks.
- ► Conductor window — where you control tempo, meter and beat settings.
- ► Song Editor window — where you display, cut, copy, paste, and regionally alter tracks. The structure of a sequence is displayed and edited in units of measures.
- ► Step Editor window — where you display the individual notes in a track. Graphic display of note data lets you see exactly what you are doing. The notes are displayed on a piano roll, moving left to right.
- ► MIDI Data windows — where you display and edit a graphic plot of pitch bend, channel pressure, key pressure, modulation, controllers, or program changes. There are six MIDI Data windows:

  Pitch Bend
  Channel Pressure
  Key Pressure
  Modulation
  Controllers
  Program Change
  Conductor Track Data Window

All of the main windows described above include menu selections at the top of screen, and various *icons* located on the screen which are used in the editing or record/playback operations. These are explained in detail in their respective chapters of this manual.

switching between windows

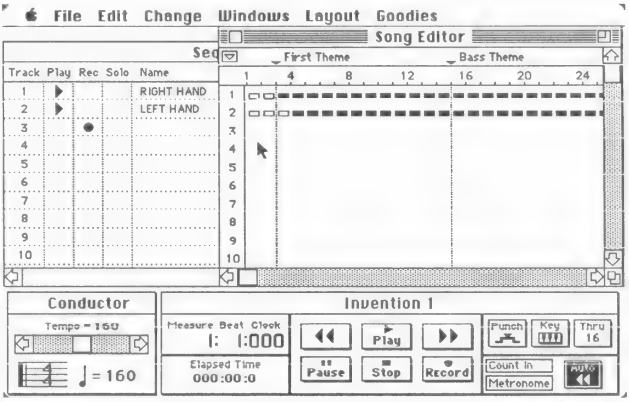
All of the windows and their associated commands are accessed via the menu bar at the top of the Mac's screen, just as they are with any other Macintosh program. You simply point to the name of the window or command you want, press the mouse button and pull the mouse toward you. Then highlight the selection you want from the menu, release the

button, and the program does the rest.

Master Track Pro lets you have several windows "open" and on the screen at the same time. However, at any given time, there is only one *active* window. The active window is the one you are working on at the time. To activate a different window you simply point to it and click the mouse. Additionally, you can move windows around to convenient locations on the screen and size them according to your preferences.

Once you have the windows set up the way you like, you can then easily switch between them. It's a little like setting up your desktop or work area to have everything in a convenient location. A setup we've found useful lines up the Song Editor and Sequencer windows so that tracks line up. The transport control sits at the bottom of the screen, as you see in Figure 1.1, as does the conductor window.

figure 1.1



The window's menu items all have Mac keyboard equivalents, too. The three main Master Tracks Pro windows can be accessed by pressing Command–1, 2, or 3.

using command keys

Aside from the menu and window selection techniques described above, there are some shortcuts you may want to use. Mac programs often let you use the Command key to perform certain operations, such as **C**opy, **P**aste, and **C**ut rather than using the menu selections directly.

To use these commands, you press the Command key and the corresponding key at the same time. Sometimes this is the first letter of the command. Having two ways to select and execute commands allows flexibility for individual preferences and situations. You may find that you prefer using the menus while you are learning the program, but that you can get things done faster using the command keys once you're more familiar with the program. If you have questions about this or other Macintosh specifics, consult the user's guide supplied with your Mac. (see the Summary of MT Pro keyboard commands in Chapter 14)

Now proceed to Chapter 2 to connect up your hardware and install your program.

2 Installation and startup

Before you begin using Master Tracks Pro, you will have to:

- ► Hook up your MIDI interface to your Mac.
- ► Connect your MIDI cables between your synthesizer and computer.
- ► Make a working copy of the Master Tracks Pro disk or install the software onto your hard disk (if you are using one).

This chapter explains how to do these procedures. Please take the time to read this chapter so that you can begin using Master Tracks Pro quickly and without any unnecessary headaches.

copy protection

Master Tracks Pro is copy protected. That means it's nearly impossible for you to make multiple copies of the disk and the Master Tracks program. Believe it or not, there are some people out there who paid thousands of dollars to monolithic companies for their synthesizers and computers, but think nothing of stealing a relatively inexpensive software program from a company like us. There's no foolproof cure for this kind of stupidity that we can think of, except to try preventing it by copy protecting our disks. Unfortunately, this makes things more complicated for both you and for us. It's an extra job for us to make our disks difficult to duplicate, and you have the hassle of being limited in the number of backup copies you can make for yourself in case your disk is somehow ruined.

►Software Installation

Copying software and giving it away or selling it is illegal. Copy protection is one method that we use to protect our legal rights. Other even more unpleasant methods are employed when necessary. We ask you to respect our copyrights and to help ensure future updates and improvements to the program by not copying our software.

We have selected a protection scheme that lets you make your own backups and use a hard disk.

getting a FREE backup disk

First of all, If you return your warranty card enclosed in the package, you will receive a FREE BACKUP DISK from Passport. This backup disk can be used as your working program disk if you so choose. If you NEVER store any data files on your program disk it should last you quite a long time. Replacement backups can be purchased from Passport.

floppy disk installation

To make a backup copy of the program on a floppy disk, copy the program disk onto a blank disk using the finder or a copy utility. Use this backup as your working disk and keep the original program disk to use as a key disk at bootup time. Master Tracks Pro will prompt you to insert the original program disk when booting from the copy.

hard disk installation

If you received a separate sheet describing installation of MT Pro on a Hard disk, please refer to the sheet for hard disk installation.

To install the program onto a SCSI ("scuzzy") hard disk (such as the DataFrame), simply boot your system off the hard disk, insert the original program disk into the Mac and double-click on the Master Tracks Pro icon. The protection program built into Master Tracks Pro will automatically sense the presence of the hard disk and ask you if you wish to install the program on a hard disk volume. If you do not wish to install Master Tracks Pro™ on your hard disk, select EXECUTE ORIGINAL and the program will boot off of the 3.5 inch disk. If you select install, you will be presented with a dialog box showing the contents of your program disk. Click on DISK to display the contents of your Hard Disk and then click on INSTALL. You can install it using a different filename if you wish.

If the program does not give you the prompt, then it may not work on your hard disk.If you have trouble installing the program

on your hard disk make sure that the program is not locked on the original program disk or that the program disk is not write protected.

You can only install the program twice on a given hard disk. However, you can "deinstall," or remove, a copy of the program from the hard disk back onto the original floppy in order to move it to another hard disk. To remove your installed copy from your hard disk back onto the original floppy, hold down the OPTION key while you double click the Master Tracks Pro™ icon on the original program disk. A dialog box will offer you the chance to select REMOVE. Do just that. Click on DISK and then open the folder containing your installed copy. Select the copy and click REMOVE. You can then Execute Original, re Install the copy, or return to the Finder. If you are using a Macintosh SE with built in hard drive, you must boot from the program disk for the installation procedure.

1. The Master Tracks Pro system consists of several highly complex and constantly evolving programs. It is very likely that, at some point in time, you will need a program update or some other form of assistance. For this reason it is vitally important that you return your warranty registration card and become a registered owner. Only registered owners will be eligible for customer service. Sending in your warranty card also places you on our database to receive new product and update announcements as well as our information packed newsletter, *The Interface*. So.....

Send in your warranty registration card today !

Also, you should have both your original disks and your manuals handy when calling in for customer service. Our personnel may ask you a few simple questions to verify that you are an authorized user.

Keep your original disks in a safe place !

You can play a part in the evolution of Master Tracks Pro. We are extremely interested in your feedback on the program

and your suggestions for future enhancements. The current version of Master Tracks Pro is the result of suggestions and comments from hundreds of users just like you. Let us know what you want to see next and we will try and implement your ideas.

Remember, you have not just purchased a disk and several hundred printed pages, you have invested in the expertise of all the people involved in the entire Master Tracks Pro project. Thank you for your support.

►Hardware Installation

Master Tracks Pro works with all 1mHz passive MIDI interfaces such as those from Passport, the MIDI Conductor, the Jam Box and the Opcode interface. Simply install your interface following the instructions supplied with it.
the Finder. If you are using a Macintosh SE with built in hard drive, you must boot from the program disk for the installation procedure.

If you are using a Passport MIDI interface and a Mac Plus, you should power up your MIDI gear first and your computer second, depending on your exact setup.

hooking up your MIDI cables

The next step is to hook up your MIDI cables. The exact configuration of cables will vary depending on your particular arsenal of equipment. However, two general schemes are shown in Figure 2.1. You will need at least two cables — one for MIDI–In and one for MIDI–Out. The first cable goes from MIDI–Out on your synthesizer or keyboard controller to the MIDI–In connector on the MIDI interface connected to your Mac. The second one goes from MIDI–Out on the interface to MIDI–In on your synthesizer.

You may want to hook up other MIDI cables too, if you have additional synthesizers and sound modules. Some interfaces have additional sockets for such connections. Alternatively, you may chain together a number of synthesizers via any MIDI–Thru connectors which your synthesizers have. To do this, you simply run a cable from your main synthesizer's MIDI–Thru socket to the second synthesizer's MIDI–In socket, and so on. Refer to the illustrations on page 2–4 if you are in doubt about cable hookups.

starting up Master Tracks Pro

To start up Master Tracks Pro, follow these instructions:

1. Turn on your MIDI equipment, then your computer in the normal manner.

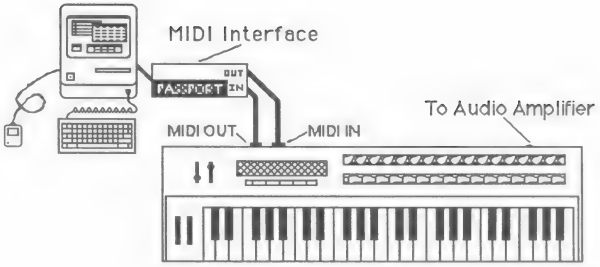
2. If you are running the program from a floppy disk, make sure you insert your Master Tracks Pro working disk.

3. Double-click on the Master Tracks Pro icon (or on the name **Master Tracks Pro** if you are viewing your directory by name rather than by icon).

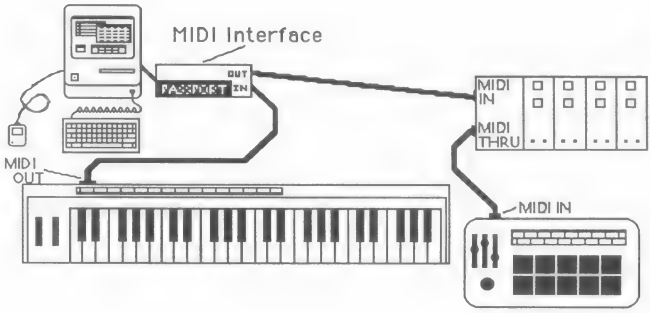
This will load the program and display the Sequencer window, Transport control, Conductor and Menu bar. You're ready to go!

Now move ahead to Chapter 3 to quickly learn how to record and play a tune with Master Tracks Pro.

cable hookup for self contained synthesizers



cable hookups for systems with controller keyboards and outboard sound modules



3 Quickstart Tutorial

This Chapter walks you through the basics of recording, editing and playing back a tune using Master Tracks Pro. Only the basics are described here, but it's enough to get you going. We certainly recommend your reading the rest of this manual to take advantage of the full capabilities of the program.

booting up

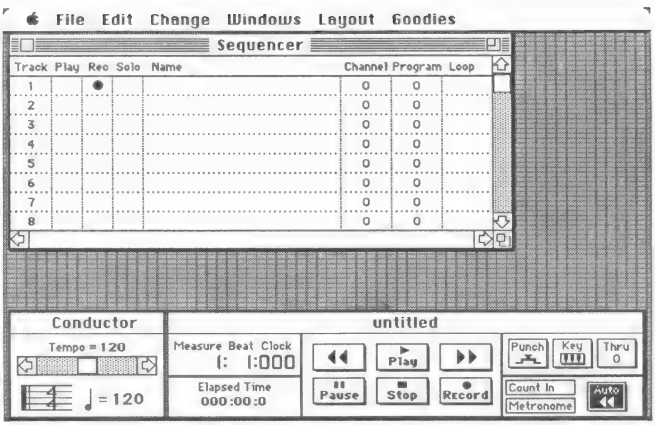
1. Begin by making sure your MIDI interface and cables are installed properly (see the section on Installation), and then turn on your MIDI instrument (it's best to turn on your instruments before you turn on the Macintosh).

2. Turn on your Macintosh, put your Master Tracks Pro disk in a disk drive, and wait until the system boots and the Finder window appears on the screen.

3. Double click on the Master Tracks Pro icon in the window to start the program.The Master Tracks Pro main screen will appear, with the Transport, Sequencer, and Conductor windows on the screen as you see in Figure 3.1.

4. Look at the Transport window at the bottom of the screen. This window contains the controls you use for starting, stopping, fast forwarding and rewinding. It also has a pair of counters to show you where you are in the sequence, and a number of other controls on the right side of the window.

figure 3.1



5. Notice that the Auto control is highlighted in inverse video, indicating that it is on. When Auto is on, the sequence automatically rewinds to its start point as soon as you stop playing or recording.

recording a track

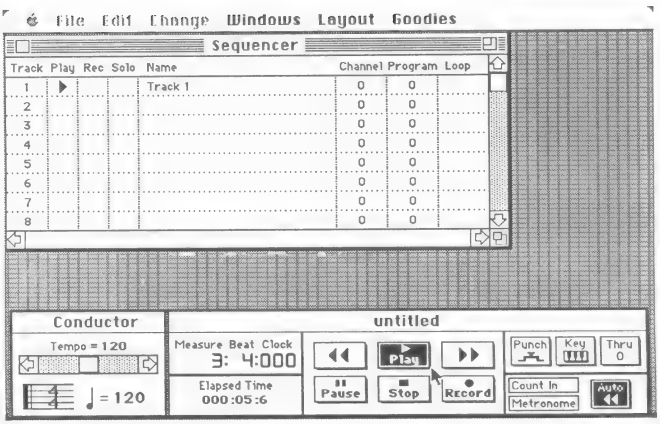
6. Notice the Sequencer window at the upper portion of your screen. Click on the Record box (the one labeled Rec) in the first track of the sequence. Be sure that a solid black circle appears in the field, indicating that the track is activated and is ready to record.

7. Get your MIDI instrument ready to record your first track, and set it to send and receive on MIDI channel 1. Start the recorder by clicking on Record in the Transport window, or by pressing Enter on the Macintosh keyboard.

8. Play your music. When you're finished playing, click on Stop in the Transport window, or simply hit the spacebar.

Notice that the counter immediately returns to measure 1, beat 1 as soon as you stop the sequence, because Auto (auto–return) is on. Notice also that in the Sequencer window, the Play box for the track you've just recorded now contains a solid black triangle, meaning that it has been activated for playback.

figure 3.2



playing your first track

1. To play back your first track, click on the Record box again to deactivate the track for recording, setting it to Play mode.

2. Click on Play in the Transport window, or press the spacebar on the Mac keyboard (see Figure 3.2).

3. To stop playback, click on Stop in the Transport window or press the spacebar again.

recording a second track

1. To record another track, go back to the Sequencer window and activate the second track for recording by clicking in its Record field. You'll see the solid black circle appear in the field.

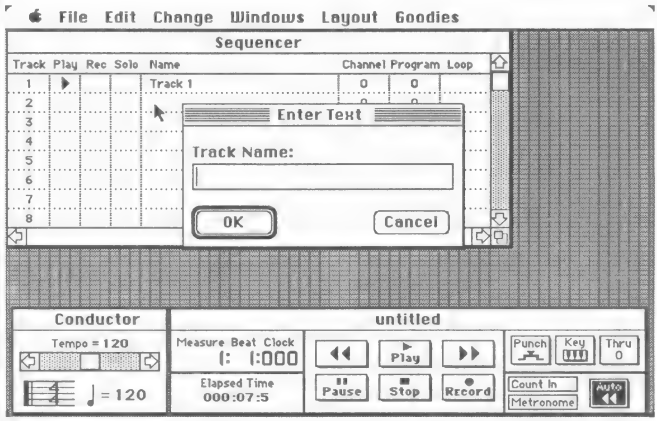
2. The rest of the process is identical to the steps you used to record your first track: just click on Record or press the Enter key to start the recorder. You'll hear your first track play while you record. When you're through, click on Stop or press the spacebar to stop the recorder.

playing both tracks

By now, it's probably obvious what you have to do to play both tracks of your two-track recording. Simply click on track 2's

Record box to deactivate it, and start the playback by clicking on Play or hitting the spacebar.

figure 3.3



naming your tracks

Master Tracks Pro lets you give each track a name for easy reference. Typical names might be "Bass", "Horns", "Lead licks", etc.

1. To name your first track, click over the track name field for the track. A small window pops up, as you see in Figure 3.3, and you can now type in the name you've chosen. When you're through, click on OK or press Return.

saving the sequence on disk

Master Tracks Pro works like any other Macintosh program when it comes to saving your work on disk. When you're ready to save:

1. Choose Save as... from the File menu.

2. As soon as you choose the Save as... command, Master Tracks Pro will pop up a dialog box that lets you name your sequence. You may also select a different Drive or Eject the current disk. Since there is very little space left on your MT Pro program disk, Eject it and insert a data

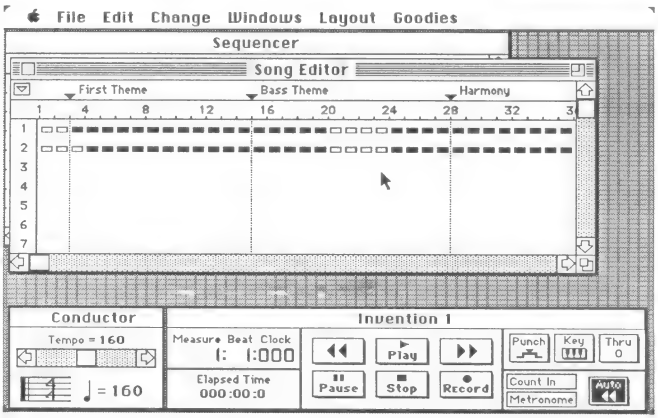
disk or blank disk. Now type in the name you've chosen, and click on OK or press Return. The file will be saved. (After you've saved a file once, you won't need to enter the name again—it will be saved automatically every time you choose the Save command.)

editing your sequence

Now that you have saved your first sequence, Open the file on your Master Tracks Pro original disk entitled J.S. Bach Invention #1. You can make changes on groups of measures from the Song Editor window.

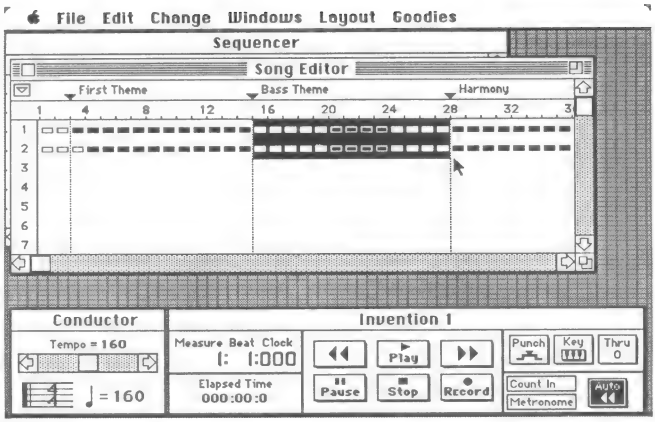
1. Choose Song Editor from the Windows menu to call up the window. A graphic representation of the sequence will appear in the window, with each track visible as a row of rectangular boxes. Each box represents a measure. If the measure contains any MIDI data, it will appear as a solid black box. If it is entirely empty, the box will appear "hollow," in outline. Both are shown in Figure 3.4.

figure 3.4



Let's say your sequence has a standard A-B-A pattern, and you want to use the edit commands to repeat the B section.

figure 3.5



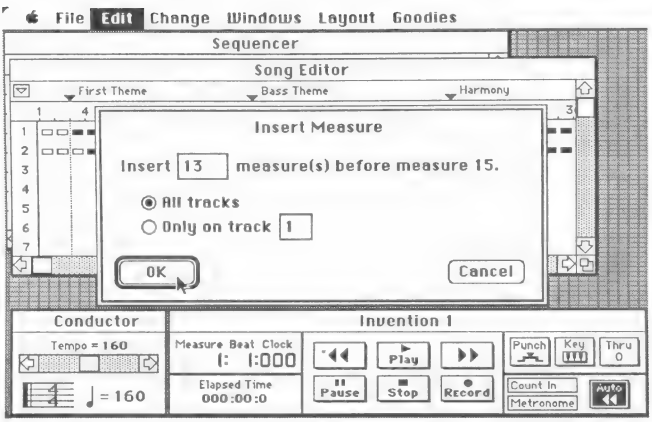
2. First, copy the B section to the Master Tracks Pro clipboard, a temporary holding area for MIDI data during the editing process. Click on the first measure in the B section in Track 1 and drag the mouse diagonally (with button still down) across both tracks until the entire B section is highlighted, as in Figure 3.5. This *selects* that range of measures.

3. When all the measures in the B section are selected, choose Copy from the Edit menu. During the brief pause, Master Tracks Pro copies the selected measures to the clipboard.

4. Next we need to insert some new measures in the sequence to make room for the repeat of the B section. Click on the space in Track 1 between the last measure of the B section and the first measure of the second A section. You'll see a blinking vertical cursor appear at this *insert point*.

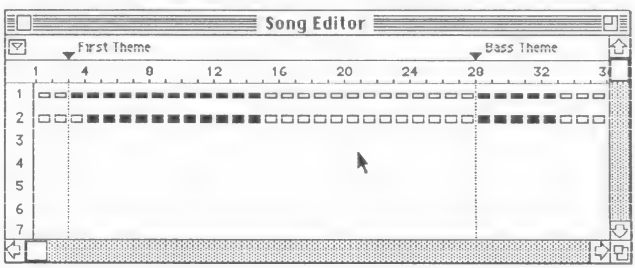
5. Now choose Insert Measures from the Edit menu. When the dialog box pops up, as in Figure 3.6, type in the number of measures that the B section contains. Click on OK or press Return when you've made your entry, and notice that new empty measures will appear in your sequence as hollow boxes.

figure 3.6



6. Now you're ready to add the B section data into these new measures. Without changing the insert point, choose Paste from the Edit menu. The entire contents of the clipboard will be emptied into the new empty measures in both tracks of your sequence, and you've just created a repeat of the B section.

figure 3.7

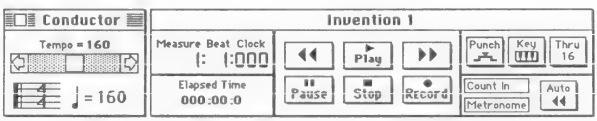


7. You can now click on the Play button or press the space bar to hear your revised sequence.

4 Basic sequencer operation

Master Tracks Pro is designed to work much like a conventional multi-track tape deck. Although a sequence is stored in the Macintosh's memory instead of on tape, you still need controls that let you play, record, fast forward, rewind, and stop the sequence. You also need a counter to tell you where you are in the sequence. The Transport window is where Master Tracks Pro provides these features.

the transport and conductor windows



The center portion of the Transport window has six screen "buttons"— play, record, fast forward, rewind, pause and stop. They function just as their counterparts on an actual tape deck. To "press" one of these buttons, you just click on it with the mouse.

Alternatively, you can control any or all of these transport functions from your MIDI keyboard. See the section on the Keyboard command in Chapter 13 for instructions on how to define the keys you want to use for transport control. You can also execute the play, record, and stop functions from the Macintosh keyboard.

Here's how each of these transport functions works:

play

Plays the sequence beginning at the point currently indicated in the counter. Pressing the spacebar on the Mac keyboard also starts playback. Before starting playback, remember to be sure that the MIDI channels set for each track agree with the instrument(s) that you are using to play the track. Also, the track or tracks you want to hear must be selected (see *selecting which tracks play*on page 4-5).

record

Click on the Record button to start recording on the track selected on the Sequencer window, beginning at the location in the sequence indicated in the Measure Counter. Pressing the Enter key on the Mac keyboard also starts the recording.

A track must be selected before you start recording, or the command will not function. See*selecting which tracks record* on page 4-5 for details.

Each time you record on a track, the new data is recorded over any data previously recorded. You can have Master Tracks Pro start recording at any point in the sequence, and existing data in the track before that point is left intact. Likewise, any data in the remainder of the track past the point at which you stop recording remains untouched.

rewind

Click on rewind to rewind the sequence a measure at a time. You can also move instantly to the beginning of the sequence by double clicking on this control.

fast forward

Click on the fast forward control to advance through the sequence a measure at a time. Double click to move instantly to the end of the sequence. You can click on Fast Forward while a sequence is playing and hear the speeded up playback.

stop

As you'd expect, clicking on the Stop button stops playback and recording. If the Auto function is on, the sequence automatically rewinds to wherever you last started playback. You can also use the spacebar on the Mac keyboard to stop

all notes off

the sequence during playback or recording. Pressing the spacebar, or clicking Stop, sends an "all notes off" command to all MIDI channels.

pause

Clicking on the Pause button pauses both play and record. Click again and the sequence resumes playing or recording.

the transport window counters

On the left side of the Transport window are two counters that let you locate your current position in the sequence. The Measure Counter at the top left displays the position in the sequence in measures, beats, and individual clock ticks (Master Tracks Pro's internal clock divides a quarter note into 240 parts (ticks). See the section on the Conductor window for more information about sequence timing).

You can move to any location in the sequence directly by clicking on the measure, beat or clock field in the Measure Counter, and typing in the number from the Mac keyboard.

seeing elapsed time

The Elapsed Time Counter shows the actual time (in minutes, seconds, and tenths of seconds) that has elapsed since the begining of the sequence. With AUTO OFF , the Elapsed Time Indicator will indicate the time from the beginning of the piece when you click at any location in an active window or use it's scroll bar. The Elapsed Time Indicator can be reset to zero at any time by clicking directly in it. This allows you to time any section from any point even while playing. The Fit Time command from the Change menu can also be used to show the elapsed time of any region.(see Fit Time chapter 10)

As you'd expect, playing the same sequence at different tempos will result in different elapsed time readings. The Elapsed Time Counter comes in handy for syncing music to video segments or commercials of predetermined length.

other transport window settings

At the right side of the Transport window are a variety of miscellaneous controls:

wait for MIDI keypress

► **Key** Clicking on the Key control highlights the control. Now when you select play or record Master Tracks Pro will wait until it detects that a MIDI key has been pressed and released before it begins recording or playing. This is one way to control the transport from the midi keyboard. (see MIDI transport control chapter 13)

auto

► **Auto** Turn on Auto by clicking on it. When Auto is on, whenever you stop the sequence it will automatically "rewind" to the point where playback started last.

count in

► **Count In** When this control is on, Master Tracks Pro's metronome counts off one measure according to the meter set in the Conductor window before starting to play or record.

metronome

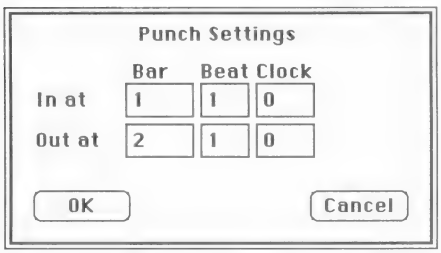
► **Metronome** Clicking on Metronome highlights the control, and turns the metronome on. Now, when you play or record a sequence, you'll hear a click tone on each beat of each measure over the Macintosh's internal speaker for the entire length of the piece. The click tone is also available through the speaker jack at the back of the Mac.

MIDI thru

► **MIDI Thru** This control is used when you're recording from a master MIDI controller, that doesn't produce sound itself, or when you want to use one synthesizer to control another while recording. Click on MIDI Thru to highlight it. With MIDI Thru on, the MIDI data you send to the Macintosh will be passed out the MIDI Out port on your Mac's MIDI interface. All the data will be sent out on the MIDI channel indicated in the MIDI Thru box. If no channel is assigned ("0"), all data will pass thru on it's incoming channel(s). The Thru channel follows the channel set for any track set to Record in the Sequencer Window.

Punch In/Out

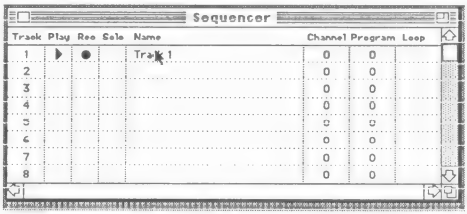
► **Punch** Click the Punch button to activate the Punch In/Out record mode. There are two ways to select the Punch region. Double click the Punch button and a dialog box appears, letting you type in the In and Out locations. The second way to select a region is to use the mouse in the Song, Edit or Midi data windows and then "OK" your selection from the dialog box. Any area selected for editing will be the Punch region. You may start the transport from any point by clicking Record,



pressing Enter or using your MIDI keyboard. Recording will start and end automatically for the selected region.

the sequencer window

The Sequencer window is the display window for some of the most basic information about your sequence. It lists the 64 tracks available in Master Tracks Pro, and allows you to select the tracks that will record or play. You can also select a MIDI channel for all data in each track, choose a name and an initial MIDI program number for the track, solo single tracks, and loop tracks independently.



If the Sequencer window is not already on your screen, or if it is hidden by other windows, you can activate it by choosing it from the Windows menu, or by pressing Command–1 on the Macintosh keyboard.

Sequencer window basics are simple. To change any item in the window, just click in the box of the item you want to change. For settings that are either on or off, an icon in the box indicates the setting is on, while an empty field means that the setting is off. For parameters that require you to enter text or numeric values, a Change Value window will pop up, allowing you to enter the information.

A "0" in the channel or program columns indicates that the function is OFF for that track.

selecting which tracks play

You can select any combination of tracks in your sequence to play back. Other tracks that are not selected will not play, even if they contain MIDI data.

Click in the Play box of each of the tracks that you want to select for playback. The triangular play icon ▶ appears in each track's Play box to show that the track is selected, and will be played when you start the sequence. In addition immediately after you complete a recording on a track, that track is automatically set to playback.

To turn play off for that track, click in the box again. The play icon will become hollow, and the track will not be played when you start the sequence. Tracks can be muted and turned back on during playback and recording.

selecting which tracks record

Only one track can be selected for recording at a time. To select a track for recording, click in the Record box for that track. A solid black circle ● appears in the Record box to indicate that the track is selected. When you start the recording, all incoming MIDI data will be recorded on that track.

To deactivate a track for recording without selecting another track, just click on the Record column for that track again. The record icon disappears.

soloing tracks

The Solo command gives you an easy way to play back a single track or a few tracks without having to individually deactivate the play box on all the other tracks. Then, when you want to hear more tracks again, you only have to turn off Solo on the selected tracks.

To select a track for soloing, just click on the track's Solo box. You'll see a solid black diamond pop up in the box. To turn solo off, just click on the box again. Any number of tracks can be soloed at a time.

naming tracks

Each track can have a name, which serves as a memo you can use to describe the music in the track or to remind yourself of which instrument and/or sound you've chosen to

play the track. These track names are saved permanently with the sequence file when you store it on a disk.

Click on the Name box in the track you wish to name (you can name any track, even if it does not contain MIDI data). A dialog box pops up and asks you to type in the name of the track. You can use any combination of characters you wish. When you're finished, click on OK or press Return to complete your entry. Or click on Cancel if you want to return to the Sequencer window without making any changes.

selecting the MIDI playback channel

The Channel box contains the current MIDI channel setting for playback of the track. To use this feature, you need a little background on the way the program handles MIDI channel information.

Master Tracks Pro supports multiple-channel tracks. You can record on any combination of channels within a track, and you can freely mix data from one track to another, retaining all the original channel data.

If you enter a channel number of 1-16 in the Channel box, all data in the track will be played on that channel. On the other hand, a channel value of 0 plays back the track exactly as it is stored in memory, on the same channel(s) it was received on.

To change the channel, click in the Channel box. A small data entry window will pop up. Type in the number of the channel you want for the track, or use the arrow controls to change the setting. When the channel number is correct, click on OK or press Return to enter it and return to the Sequencer window. Of course, you can click on Cancel to leave the setting as it was. Thru follows the channel for any track set to record.

setting the program number

A *program* is the MIDI term for a MIDI device's programmed setup, stored in the memory of the device. On a synthesizer, a program is equivalent to a "patch" or sound. On a drum machine, a program may select a particular song, and on a MIDI effects device it may select a configuration setting with pre-programmed values for all the parameters on the device. Each program has a number, and when a MIDI program change message is sent to the device, the device responds by switching to that program number.

Master Tracks Pro allows you to record program changes at any point in a track, and to enter as many program changes as you like via the Program Change window accessible on the Windows menu. On the Sequencer window, however, the number in the Program field refers only to the program number that Master Tracks Pro will send when the sequence begins playing from the beginning.

If the program setting is 0 (the default), no program change is sent when the sequence begins---your instrument will remain set to whatever program it's already on, until it receives a program change from the sequence data. Likewise, if you start the sequence from some point other than the very beginning, the program indicated in the Program field is not sent, and only program changes stored in the sequence data will be sent.

To change the program setting, click on the Program field for the track you want. When the small data entry window pops up, type in the number of the program you wish, or click on the arrow keys to raise or lower the value. When the number is correct, click on OK or press Return to enter it and return to the Sequencer window, or click on Cancel to return without entering the change. The program change will be sent out whenever you click OK or press Return even when a sequence is playing.

looping a track

Each track in a Master Tracks Pro sequence can be independently looped. When the sequence gets to the end of a track, it plays the track over again from the beginning, no matter what other tracks are doing.

Since the Record function always rounds recorded tracks to the nearest complete measure, the track always plays to the end of a measure before looping back, even if no notes are playing in the measure.

Another important detail is that looping only works if you start playback before any of the tracks in the sequence have ended. If you have a short track and start playback in the middle of the song, after that track has ended, the looped track won't play.

To set a track to loop, simply click in the Loop box for the track, at the far right of the Sequencer window. The Loop icon ↩ will appear in the box. To shut the loop function off, click on

the loop box again, and the icon disappears.

playing a sequence

To play a sequence, first be sure to select the tracks you want to play, and check that the MIDI channels agree on your MIDI devices with the data in the sequence. If you wish, use the transport controls to move the Measure Counter to the point in the sequence where you want to begin playback.

You can start playback in one of three ways:

- click on the Play button in the Transport window.
- press the spacebar on the Mac keyboard.
- assign a key on your MIDI keyboard to start playback. To select the key you wish to use for this purpose, use the Keyboard command on the Goodies menu. See Chapter 13 for details.

Once you start the play function with one of these controls, the sequence will immediately begin to play if the Key and Count In settings on the Transport window are off, and if Sync is set to internal with the MIDI setup command on the Goodies menu. If Key is on, however, Master Tracks Pro will pause before beginning to play until it detects that a MIDI key has been played and released. If Count In is on, you'll get a one measure count-in, and then play will begin. Finally, if Sync is set to MIDI, Master Tracks Pro will wait to begin playback until it receives a Start command from the external MIDI sync source.

During playback, you can change sequence tempo with the scroll bar on the Conductor window. You can even switch between windows while the sequence is playing, and examine data in any part of any track without interrupting playback.

recording a track

To record a track, first select it for recording by clicking in the Sequencer window Record box as described earlier.

The program can record on all 16 MIDI channels simultaneously. After you've recorded a track containing data on multiple channels, you can use the Strip Data command on the Change menu to move the data for each channel onto its own track. If you wish, however, you can use the Record Filter on the Goodies menu to select a particular channel

before you start recording (check Chapter 13 for details on the Record Filter).

If you do select a channel on the Record Filter, Master Tracks Pro will only record the data from that channel, and will ignore any data it receives on other channels. In this case, you'll need to be sure that your synthesizer is set to send on the same channel before you start to record.

Master Tracks Pro can record all types of MIDI data, but you can also use the Record Filter to filter out any types you don't want to record. Again, check Chapter 13 for more details. If you want to separate various types of data after the recording is already complete, use the Strip Data command on the Change menu.

Start recording with one of these three options:

- ► Click on the Record button on the Transport window
- ► Press the Enter key on the Macintosh keyboard.
- ► Play the key on your MIDI keyboard that you've assigned to the Record function. See Chapter 13 for details on how to make the key assignment with the Keyboard command.

At this point, if the Key and Count In controls on the Transport window are off, and if Sync is set to Internal with the MIDI Setup command, Master Tracks Pro will immediately begin to record.

On the other hand, if Key is on, the program will wait until it detects that a MIDI key has been pressed and released before it begins recording. If Count–in is on, you'll get a one-measure count-in (you can hear it if the metronome is on), and then the recorder starts. If sync is set to MIDI, Master Tracks Pro will pause until it receives the signal to start from an external MIDI device.

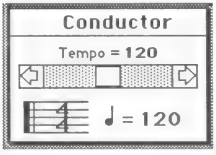
When you've finished recording, click on the Stop button in the Transport window, hit the spacebar on the Mac keyboard, or play the key on your MIDI keyboard that you've assigned to the Stop function.

As soon as you have finished recording a track, the program automatically activates the track for playback, and the play

icon appears in the track's Play box.

It's a good idea to get in the habit of deactivating a track's record mode right after you've recorded it so you don't record over it accidentally next time. Click on the track's Record box in the Sequencer window, so that the circle disappears from the box, protecting the track.

the conductor window



The Conductor window is a small but very important Master Tracks Pro window, since it displays sequence timing information. On the Conductor window, you'll see the current values for the tempo, the beat, and the meter, as set on a special Master Tracks Pro track called the Conductor track. If the Conductor window is not on the screen, or if it is hidden behind other windows, you can make it visible by choosing Conductor on the Goodies menu.

changing the tempo

You can use the tempo scroll bar in the Conductor window to change the tempo, even while a sequence is playing or recording. There are three ways to do this:

- You can click and hold on the scroll box in the scroll bar, and drag it directly to a new value.
- Clicking anywhere in the grey part of the scroll bar moves the scroll box rapidly toward that location, and causes a corresponding rapid change in the tempo setting.
- Finally you can click and hold over one of the arrow controls at either end of the scroll bar. This changes the tempo value one value at a time.

the conductor track

The Conductor track is a separate track in a Master Tracks Pro sequence that determines timing for the entire sequence. The Conductor track allows each measure to have its own meter, tempo, and beat note, and the tempo can change gradually, even within a single measure.

You can think of tempo changes you make with the scroll bar in the Conductor window as offsets to the actual tempo value stored in the Conductor track. The play tempo in the Conductor window automatically follows the changes in the Conductor track tempo. When you change the play tempo using the Conductor window scroll bar, all the original tempo changes in the Conductor track are preserved, but during playback, they are scaled proportionally to the change you make. When you click in an active window with Auto Off, the elapsed time setting is calculated based on the actual Conductor track, not the playback offset. Once you settle on a tempo you like, it is a good idea to use the Conductor dialog from the change dialog to adjust the actual Conductor track tempo. If you have tempo changes in your sequence, this adjustment should be made using the percentage box to preserve the tempo changes.

To enter new Conductor track settings for the entire sequence or a given range of measures, you may select the Change Conductor dialog box, either by clicking over the meter display in the Conductor window, or by choosing Conductor... on the Change menu. See the section on changing Conductor values in Chapter 10 for details.

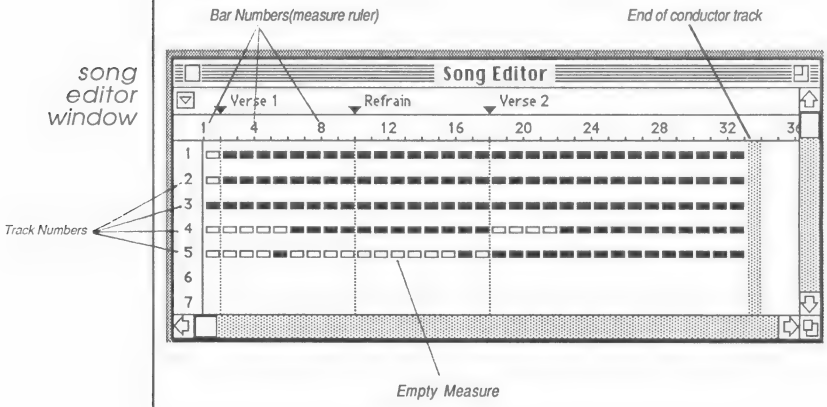
Changes to the Conductor track may be made graphically using the Conductor Track Data Window from the Windows Menu. The Conductor Track Data Window is intended mainly for viewing the Conductor Track and for "fine tuning". Basic changes to the Conductor track should be made using the Conductor dialog from the Change menu. See Chapter 7 for details.

5 Song Editor Window

The Song Editor allows you to edit large blocks of music at one time. Working on groups of measures, you can move sections of music within a sequence or build new sequences from segments of other sequences. You can also modify the data in a variety of ways using the commands in the Edit and Change menus.

Select the Song Editor window by choosing it from the Windows menu, or by typing Command–2 on the Mac keyboard.

song editor window



Like the sequencer window, the song editor is a table of tracks in which each track is listed on a separate row. But

instead of alpha-numeric information, the Song Editor window provides a graphic representation of the musical data that the track contains, in one-measure blocks.

The left border of the window is marked with the track numbers, and the top border is a *measure ruler* which marks off the measure numbers. Tracks containing MIDI data appear on the screen as a row of rectangular boxes, each box representing a measure. Solid black boxes contain MIDI data, while hollow boxes are measures of rests, without any MIDI data.

The grey vertical bar at the end of the data area represents the end of the conductor track for the sequence. Even if the tracks you're looking at are completely empty of MIDI data, and no measure boxes are on the screen, the grey bar will still appear at the measure where the conductor track ends.

scrolling through the song editor window

You can scroll through the track data on the Song Editor window using the scroll bars as you would with other Macintosh programs. You can also scroll using the method described for selecting blocks of measures in the section on "Selecting measures to edit," below.

playback point

Clicking anywhere in the Song Window with Auto OFF, will set the transport to start playing or recording from that point.

the measure ruler

The row of numbers at the top of the Song Editor window is the measure ruler. It marks off measures in the sequence so that you can keep track of which part of the sequence you're looking at. You can change the numbering scheme displayed on the measure ruler by pressing one of the number keys 3-0 across the top of the Mac keyboard. If you press 3, every third measure on the ruler (1,3,6,9, and so on) is numbered, while the rest of the measures are indicated by hash marks. If you press 4, every fourth measure is numbered, and so on. Pressing 0 numbers every tenth measure. The "+" key will increment your selection by one and the "-" key will change it back again.

using song markers

Master Tracks Pro provides *markers* that let you identify a particular location in your sequence so that you can return to it any time you wish. Markers always mark the beginning of a measure.

Master Tracks Pro markers look and act like tab stops in Macwrite and other Macintosh word processing programs. In Macwrite, tabs appear on a special horizontal bar called a document ruler.

In Master Tracks Pro, markers are displayed at the top of the Song Editor window, just below the window's title bar, on another horizontal bar called the *marker ruler.* Markers are also displayed in the Step Editor and MIDI Data windows, but you can only place or move them using the Song Editor window.

The marker ruler appears in these windows only if the Show Markers command on the Layout menu is in effect. If you choose Hide Markers, the ruler will disappear from all the windows.

placing markers

When the marker ruler is visible, you'll see a small box at its left edge containing a hollow upside-down triangle. This box is called the *well.* To place a marker into the marker ruler, click and hold over the well. Another upside-down triangle, the marker you'll be placing, will appear just below the well.

Now, while still holding down the mouse button, drag the new marker to the measure where you want to place it. Once you've positioned the marker, release the mouse button. The marker will remain where you've placed it, and will become solid black. In addition, a vertical dotted line will appear below the marker, extending through the track list to help you see exactly where the marked measure is in your track.
You can move the marker any time you're in the Song Window, by clicking and holding on it, and dragging to its new location.

moving to a marker

To move the Song Editor, Step Editor, or MIDI Data window display to the next marker in the ruler, press the Tab key on the Macintosh keyboard. The data in the window will move so that the next marker is at the extreme left of the window. Press the Tab key repeatedly until you reach the marker you wish. Only the active window is affected.
To move to a previous marker, press Shift-Tab. Again, the data lines up so that the marker is at the left edge of the window.

In a large composition, you may want to make a note to

yourself to help you remember the music each marker is pointing to. Master Tracks Pro helps out by letting you name the markers on the screen. Once you've named a marker, the name appears to its immediate right on the marker ruler.

naming a marker

There are two ways to name a marker or change its name. From the Song Editor window, you can double click on the marker to bring up a dialog box for the marker name. Type in the name from the Mac keyboard, then click on OK or press Return to enter it and return to the Song Editor.
The other way to name markers involves the Markers window, which is available on the Goodies menu. See the chapter on the Goodies menu for further information.

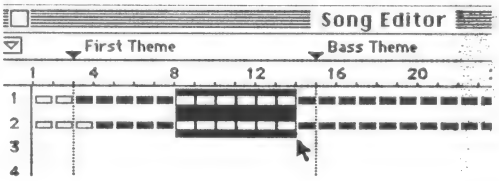
editing MIDI data

The Song Editor lets you easily change MIDI data in large regions using all the commands on both the Edit and Change menus. Again, the smallest unit available for editing changes in the Song Editor window is an entire measure, and all edits are done on multiples of whole measures. Also, the edits you make in the Song Editor window affect all types of MIDI data at once. Commands like Cut on the Edit menu, or Channel on the Change menu affect MIDI data such as controller data and program changes, as well as note information.

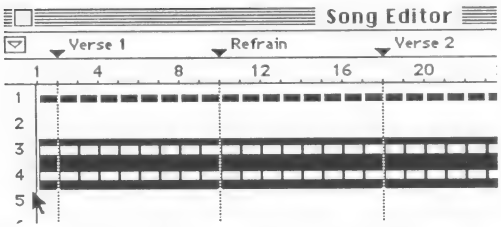
To make changes to one or more measures of your sequence using menu commands, the region of measures must first be *selected*. Selected measures appear on the screen highlighted in inverse video.

To select one or more adjacent measures in a single track, click over the first measure in the track, and drag over the entire group.

selecting measures to edit

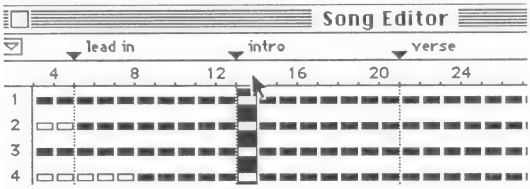


selecting an entire track



To select an entire track, click on the track number in the left hand column. To select several adjacent entire tracks, click and hold over the first track number in the group, and drag the mouse up or down in
the track number field.

selecting measures across all tracks



To select one measure in all tracks, click on the column for that measure in the measure ruler at the top of the window. To select adjacent measures in all tracks, click and hold on the column for the first measure in the group and drag to the column for the last measure.

To deselect a selected area, simply click anywhere on the Song Editor window.

selecting a block of measures

There are two ways to select a block of measures across multiple tracks. First, you can position the mouse pointer at one corner of the block, click, and drag towards the diagonally opposite corner until the inverse highlight covers the measures you want to select. If all the measures you want to select aren't visible on the screen, you can scroll the screen simply by dragging to any edge of the window. The window will scroll and the selection highlight will move with it.

This technique can be used to scroll the Song Editor window, even if you don't want to select that particular block of measures. When you're through scrolling, simply click again, and the selected block will be unselected.

shift click

Second, a block can be defined by clicking at one corner of the block, holding down the shift key on the Mac keyboard, and then clicking on the diagonally opposite corner. To define a block that is larger than one screen, you can scroll with the scroll bars after clicking on the first corner, but you must hold down the shift key before you click on the data area again.

Note: If you plan to Cut, Copy, or Clear a region that includes notes that are tied from or to other measures, you should be sure you understand the way Master Tracks Pro handles this situation. Read the section on tied notes in Chapter 9 for details.

editing the selected music

Once you have selected a measure or measures, you can edit the region using the commands on the Edit or Change menus. See Chapters 9 and 10 for instructions.

playing a sequence from the song editor

Master Tracks Pro lets you play your sequence no matter what window you're using, and the Song Editor window is no exception. Just click on theTransport's Play button or hit the spacebar to start playback.

scrolling during playback

If you wish, you can set the Song Editor screen to scroll through the sequence data during playback, using the Follow Playback command on the Layout menu. If the Follow Playback command is on, and the Song Window is selected as the Active Window, a vertical highlight bar moves along the track data to mark the measure that is currently playing.

You can also use the Song Editor to determine at what point the song begins playing. This capability is useful when you want to hear just the part of the song you're working with, and you can also use it as an alternative to the fast forward and rewind buttons on the transport window.

playback point

To use the Song Editor to determine the point at which play begins, you must first turn the Transport window's Auto control off. With Auto off, and the Song Editor Window active, click in the window at the place you want playback to begin. It's that simple. Once play begins, scrolling the Song Editor window has no effect on what you hear.

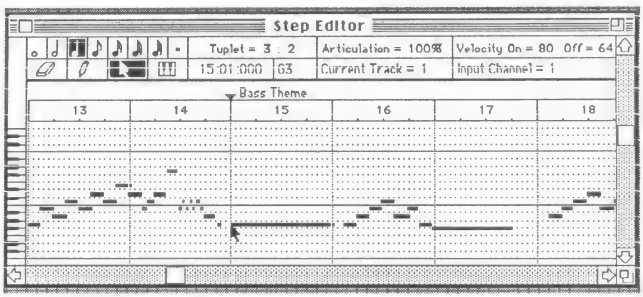
You can control the playback point in the same way when you are using the Step Editor window or any of the MIDI data windows.

moving to the step editor

From the Song Editor, you can move directly to the Step Editor to work on any specific measure in any track you wish. Simply double click on that track and measure in the Song Editor window.

6 Step Editor Window

The Step Edit window is used exclusively for note data. It provides a variety of precision tools that let you input and edit notes in small groups or individually.



Select the Step Editor window by choosing it from the Windows menu, or by typing Command–3 on the Mac keyboard. You can also open the Step Edit window at a specific measure in a particular track by double clicking on that measure in the Song Editor window.

The Step Editor window is devoted primarily to a graphic display of one track's worth of note events. This data area is divided by a grid of fine dotted lines that makes it easier to accurately determine the position of notes in the window. You can decide whether to display the grid with small divisions or divisions at every octave (see the Show/Hide Grid command in the Layout menu).

The note data itself is displayed in the data area as a sideways player piano roll. Each note is represented as a small rectangle, or *note bar*, oriented horizontally in the data area.

Along the top border of the data area is a *measure ruler*, which marks off the measures and beats in the track. At the left border there's a keyboard graphic to indicate the pitches of the notes in the track.

Just above the top border of the data area is another horizontal bar, the marker ruler. If any markers are set, they'll be displayed here just as in the Song Editor window. The marker ruler can be toggled off by selecting Hide Markers from the Layout menu. This expands the data area. To toggle the marker ruler back on, select Show markers from the Layout menu.

At the top of the window there are two rows of icons and parameter settings, collectively called the menu bar. On the top row of the menu bar, you'll see several note icons, representing the rhythmic values of the notes you insert; a tuplet box; and controls for note articulation and velocity.

On the second menu bar row are several note editing icons, pitch and time indicators, and track and MIDI channel controls.

All of the options on the first menu bar row, along with the channel control, are used only during input of new notes. The remaining options are used in a variety of editing functions.

show/hide the grid

Like the lines on a piece of graph paper, the grid in the Step Editor helps you locate your position more precisely. The vertical lines in the grid represent measures, while the horizontal lines indicate pitch.

You can choose whether the grid has horizontal divisions only at octaves, or has a division for every "white key" using the Show/Hide Grid command. The version of the grid you use is a matter of personal taste. The Show/Hide Grid command functions as a toggle.To display the full grid, choose the Show Grid command. To show the grid with only the octave divisions, choose the Hide Grid command.

scrolling the window

As in the Song Editor window, you can scroll through the data in the Step Editor window with scroll bars, like any standard Macintosh program.

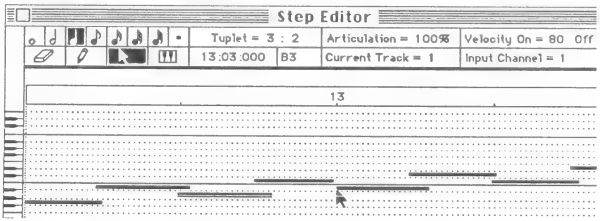
moving to a marker

Just as in the Song Editor window, markers are displayed on a marker ruler near the top of the Step Editor window, and you can move the display to a marker position using the Tab and Shift-Tab keys. However, you can only set the markers in the Song Editor. Again, to see the marker ruler and use the markers, you must have chosen the Show Markers command from the Layout menu first.

zooming in and out

Master Tracks Pro's two Zoom commands let you decide how much of the track data you can see at one time on the Step Editor window. Like a zoom lens, the Zoom commands let you Zoom in or out for different levels of "magnification." You can zoom in to work on small portions of the track more precisely, or zoom out or to see more notes all at once.

The Zoom level you choose not only affects how much of the sequence you can see, it also determines how precise your editing changes and additions can be. This is because the Zoom level sets the minimum number of clock ticks that you can move the mouse. When you're zoomed all the way out, moving the mouse by a single pixel on the screen moves you 24 clock ticks in the sequence. When you're zoomed in all the way, you can move the mouse by individual clock ticks.



Master Tracks Pro gives you six different different Zoom views. To zoom in one level, choose the Zoom In command from the View menu or press Command–[on the Mac keyboard. To Zoom out, choose the Zoom Out command, or press Command–] on the keyboard.

switching to another track

The Step Editor window displays note data from only a single track at a time, and you must switch the display to another track to edit its data. Change tracks by clicking on the Current Track box. When the change value window pops up, type in the new track number, or click on the arrow controls to change it incrementally.

Click on OK once you've entered the correct number, or press Return on the Mac keyboard. The change value window will disappear, and the new track will be displayed.

playing a sequence from the step editor

As in the Song Editor window, you can play your sequence while you are using the Step Editor window.

scrolling during playback

At your option, you can have the Step Editor window scroll through the track data while the sequence plays. Choose the Follow Playback command on the Layout menu to enable this feature. As each measure plays, its indicator at the top border of the data area gets highlighted in inverse video. The Step Editor Window must be selected as the Active Window for scrolling to take place during playback. With Follow Playback turned off, the Step Window can be scrolled and examined independently of transport counter position during playback.

playback point

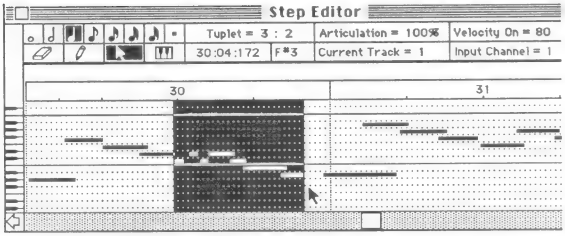
The playback / record start point can be set by clicking with the arrow cursor in the Step Editor Window at the desired location, providing Auto is off, just as in the Song Editor or Midi Data Windows.

Editing Note Data

Master Tracks Pro gives you powerful control over the step editing process with a variety of editing options. You can select editing regions, just as in the song editor window, and you can also add, delete, edit, move or copy individual notes.

editing regions of notes

With regional editing, you can quickly edit a group of notes all at once. Using the commands on the Edit and Change menus, you can move, copy, or delete the note data, transpose the pitches of all the notes in the region; change MIDI data such as MIDI channel and note velocity; and alter timing in several ways. See the chapters on the Edit and Change menus for more details on these features.

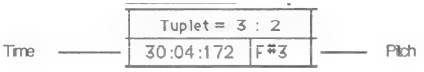


To edit a region of notes, the region must first be selected using the arrow cursor. On the Step Editor window, a region consists of all notes in the track along a horizontal section of the window, in other words, between two points in time in the sequence. You cannot define regions vertically (by pitch)—all pitches are automatically included in a selected horizontal region.

For many operations, you'll need a way to locate notes precisely in the data area both in terms of time and pitch. That guidance is provided by the time and pitch indicators in the menu bar.

pitch and time indicators

The time indicator always displays the time value at the current position of the cursor, in measures, beats and clock ticks.



The pitch at the current cursor position appears in the pitch indicator, displayed as a pitch letter name and an octave number. Master Tracks Pro can handle all MIDI pitches, a range from C –2 to G8 (middle C is C3). Accidentals are always displayed as sharps.

choosing zoom level

Since all editing operations occur on clock tick boundaries, how precisely you can define the beginning and end of a region depends on the Zoom level. At the highest magnification, zoomed all the way in, you can define the region by individual clock ticks (there are 240 clock ticks per quarter note). When you're zoomed all the way out, on the other hand, the resolution is much coarser, and the smallest movement of the mouse represents 24 clock ticks, or one-tenth of a quarter note.

No matter which Zoom level you're using, you'll need a way to keep track of where you are in the sequence while you're defining regions. For many editing commands, the measure and beat demarcations in the measure ruler at the top of the step editor window will give you all the information you need to locate the endpoints of your region. For more precise work however, you can use the time indicator in the menu bar to begin and end the region at exactly the right point.

Notice that as you move the arrow pointer around on the data area, the time indicator changes to show the exact beat location of the current pointer position.

Important: Edit and Change menu commands will only affect notes in the selected region if those notes *begin* in the region. That's one reason to pay attention to the Zoom level while you're selecting a region—a note can appear to be within the selected region when it actually starts slightly before the beginning of the region. You may be zoomed out too far to see this. If the beginning of a note falls within the selected region, the entire note will be altered by the command you use, even if the end of the note isn't included in the selected region.

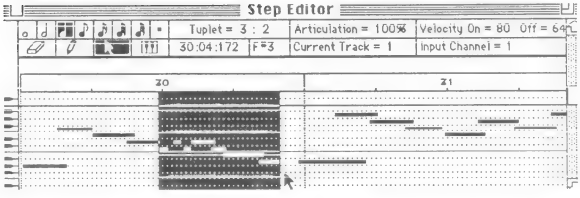
tied notes

There is an exception to the rules just mentioned, however. Notes in the selected region that are tied over from an earlier measure are recognized by commands such as Cut, Copy, and Clear if the region begins precisely on the measure boundary. See the section on tied notes in Chapter 9 for more detail.

selecting a region for editing

To select a region for editing, choose the arrow pointer on the step editor menu bar by clicking on it. Now, move the pointer into the data area to the left edge of the region you wish to select.

Click and hold the mouse button, drag the pointer to the right edge of the region. You can scroll the screen while selecting a region by dragging the pointer to the right screen boundary. As you select a region, the region becomes highlighted in inverse video.



Release the mouse button when you've defined the region as you want it. You can now use the Edit and Change menu commands on the selected region. Clicking in the measure ruler will select an entire measure at a time. You can select an area and then use the scroll bar to scroll to the end of the area you wish to select and hold the Shift key while you click the mouse. This selects the entire area.

inserting new notes

Master Tracks Pro gives you two ways to insert new notes in your sequence: you can use the mouse exclusively, or you can enter the desired pitch by playing the corresponding key on your MIDI keyboard.

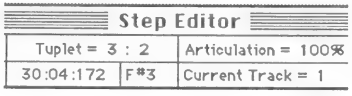
choosing note durations

With either method, you start the process by selecting values for the note's duration, velocity, MIDI channel, and articulation. Choose the duration, or rhythmic value, you want by clicking over the appropriate note icon at the left side of the menu bar. Selecting the dot icon multiplies the duration of the note value by 1- 1/2.

If you wish, you can select a combination of note values, and all the selected values add together for the total duration of the note you are inserting. To select more than one value, click on the first note type you want to select, and then hold the shift key down as you click on the remaining note types.

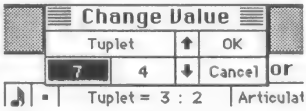
tuplets

To enter notes with tuplet values, click over the word "Tuplet" in the tuplet box in the menu bar. When the box is highlighted, any notes you insert will have the tuplet value shown in the box.



For example, say the value in the tuplet box is 3:2, and you've selected the eighth note duration icon. In this case, with the tuplet command on, the timing of the notes you insert will be adjusted so that three of these notes would fit in the time normally occupied by two regular eighth notes. This is equivalent to eighth note triplets. For a quintuplet you would select 5:2.

You can choose a wide range of tuplet values to create complex polyrhythms or to experiment with other unorthodox note timings. To set a new tuplet value, click over the current value in the tuplet box. A small Change Value window will pop up, allowing you to change both numbers in the tuplet value.



The number you wish to change in this window must be highlighted first. If it's not, click on it. Then click over the arrow controls to raise or lower the number as you wish, or type in a number from the Mac keyboard. When both numbers are correct, click on OK or press Return to enter them and return to the Step Editor window.

setting other note values

Notes you insert in the track in the Step Editor window take on the values displayed in the menu bar for articulation, on and off velocity, and input MIDI channel. Articulation refers to the percentage of the note's duration value that it actually plays. By varying the articulation setting, you can add changes in note length to define phrases or legato and staccato passages. Shorter articulations produce a more staccato effect. The input channel and velocity settings refer to the standard MIDI input parameters.

Before inserting a note, you can change the current settings for these parameters by clicking on the appropriate fields. When you do, the corresponding Change Value window will appear. You can either type in a new value from the Mac keyboard, or click over the arrow controls to raise or lower the value incrementally. Then click on OK or press Return.

inserting notes with the mouse

To insert notes using the mouse, first select the pencil icon in the menu bar by clicking on it. When you move the pointer to the data area, it becomes a crosshair that lets you position the new note exactly where you want it on the screen.

Using the keyboard graphic at the left of the data area and the measure and beat markings along the top, align the crosshair so that it corresponds to the pitch and time where you want to insert the note. You can also use the pitch and time indicators in the menu bar to locate the position precisely.

When you have the correct position, single click on the mouse. A new note bar will be inserted into the data area at that position, its length corresponding to the duration and articulation you selected.

inserting notes with a MIDI keyboard

Follow the above steps for selecting the note's duration, input channel, and articulation. Then, select the keyboard icon next to the arrow in the menu bar by clicking on it. Since you're using your MIDI keyboard to enter pitch and velocity data, you don't need a crosshair, and the mouse pointer remains an I-beam cursor when you move it into the data area.

Position the I-beam at the horizontal position where you want to enter the first note. Use the time indicator in the menu bar for precision. Once you've positioned the cursor properly, click on the mouse to activate the insertion point for MIDI keyboard note entry.

Now you can enter notes by pressing the corresponding keys on your MIDI keyboard. Each time you play a key, a new note bar will appear at the pitch and time you specified, and the I-beam cursor advances to the next insertion point. If you play a chord, (hold down notes while adding additional ones), all it's notes will start at the same time. As you continue to insert notes, the Step Editor window scrolls appropriately. Velocity is recorded with each note and can be adjusted if you like from the Change menu.

rests

Pressing Return on the Mac keyboard inserts a rest corresponding to the note duration that is currently selected.

backspacing to erase mistakes

If you play the wrong key during the pitch entry process, press the Backspace key on the Mac keyboard to delete it. In fact, you can "backspace" all the way back to your last insertion point if you wish.

During the note entry process, you can switch to new note durations with either the note icons on the menu bar, or via the MIDI keyboard using keys you've assigned to duration values with the Keyboard command on the Goodies menu (see Chapter 13 for details).

moving and copying notes

With the move and copy commands, you can transfer all of a note's data, including its duration, channel and velocity to a new location. Of course, the pitch and/or the start time of the note at the new location may be different, depending on where you move the note.

moving the note

To move a note somewhere else in the track, or to make a copy of a note at another location, you'll need the crosshair mouse pointer. To get it, click over the pencil icon in the menu bar, and then move the pointer over the note you want to move or copy. The center of the crosshair must be directly on the note. Although the center of the crosshair can be anywhere along the note's length, it's best to place it precisely at the beginning of the note, so that you can use the time indicator in the menu bar to locate the point where you insert the note with precision.

Now, if you want to *move* the note from its current position to a new one, simply click and hold the mouse button. A dotted border will appear around the note bar, and while you continue to hold the mouse button you can drag this "note ghost" to a new pitch and/or time in the sequence. When the note is correctly positioned, release the mouse button. The ghost will be returned to life as a solid note bar at the new location, while the note bar at the previous location will vanish.

shift click

There will be times you want to shift a note's position in time but not change its pitch, or vice versa. To make these operations easier, Master Tracks Pro provides a way to lock in a note's pitch or start time during a move operation.

To lock in the pitch or start time, hold down the shift key and then click and hold on the note. Now, as you continue to hold down the mouse button, whichever way you first move the mouse locks in the note's position on the other axis.

So, for example, if you first move the mouse horizontally, you've locked in the pitch, and you can't move the note vertically. You can now only move the note horizontally, in time. Except for this detail, the move operation proceeds normally.

copying the note

Copying a note involves essentially the same steps, except that instead of just clicking over the note you want to copy, you must hold down the Option key on the Mac keyboard before you click on the note. Once the "note ghost" border appears, you can release the Option key, and continue by dragging the cursor to the location where you want to insert the copy. When you're in position, release the mouse button, and a new note bar will appear. The original you copied from remains where it was.

erasing a note

You can erase an individual note with the eraser mouse pointer. Click over the eraser icon in the menu bar. When you move the pointer down into the data area, it becomes a crosshair inside a circle.

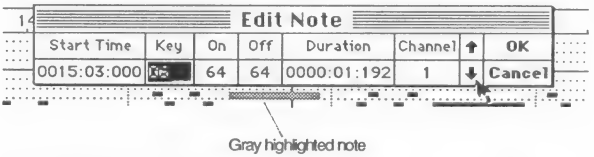
To erase a note, simply position this eraser cursor anywhere along the note and single click. The note will disappear from the window. You'll probably find it easier to erase the note you're actually intending to remove when you're not zoomed out to the higher magnifications, where note durations appear very short on the screen.

editing individual notes

Editing commands for single note events allow you to place new notes in your sequence, and to move, copy, or delete existing notes using the mouse. If you need more precision, Master Tracks Pro also gives you a numeric method for altering each note's data.

editing note parameters numerically

To alter an individual note's pitch, start time, duration, on and off velocities, or channel, select the arrow mouse pointer by clicking over the arrow in the menu bar. Move the arrow directly over the note you want to edit, and double click.



After a moment, the Edit Note window pops up, and a gray highlight appears over the note being edited so you won't forget which one you're working on.

To change one of the values in the window, select it by clicking on it to highlight it. Use the arrow controls at the right of the window to change the value incrementally, or type in a new value directly from the Mac keyboard. Master Tracks Pro won't let you enter invalid settings for these parameters, and will only beep if you try.

The *Start Time* parameter refers to the point in the sequence that the note begins, in measures, beats, and clock ticks. Rather than setting an end time, however, you use the *Duration* parameter to determine how long the note lasts, again in measures, beats, and clock ticks.

You can change the MIDI key number (Pitch) with the arrow controls, or by typing a pitch letter name followed by an octave number, or by pressing the appropriate key on your MIDI keyboard. The On Velocity and Off (release) Velocity are changed in the same manner as is the output MIDI channel. In order to change the output MIDI channel on a note or range of notes, the channel setting in the Sequencer Window must be set to "0".

Once all the parameters in the Edit Note window are to your liking, click on OK or press Return to finalize them and close the window. You can click on Cancel instead to return to the Step Editor window without making any changes.

special keyboard commands

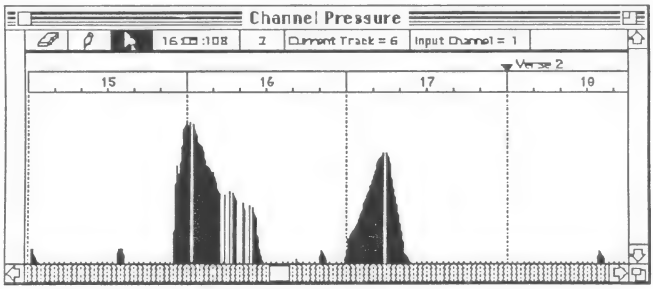
You can control the Sequencer status of the current track from the Step Editor window using special keyboard commands.

Option – P - toggles play / mute
Option – R - toggles record on / off
Option – S - toggles solo on / off
Option – L - toggles loop on / off

Using these Option key combinations saves the bother of making the Sequencer window active in order to effect playback changes to the track you're working on.

7 Using MIDI Data Windows

Master Tracks Pro provides six special MIDI Data windows for graphically editing types of MIDI data other than notes on an event-by-event basis. Instead of having to work with a long list of numbers, you can see your data at a glance on the graph, yet you can still edit it with full precision. You'll find separate MIDI Data windows for pitch bend, channel pressure, key pressure, modulation, controllers, and program change data. Here's an example of a MIDI data window showing aftertouch (Channel Pressure).



opening a data window

There are two ways to open a MIDI Data window. First, you can choose it from the Windows menu with the mouse. Second, you can open it from the Mac keyboard by typing the Command key along with the number key that corresponds to the window, as follows:

- ▶ Pitch Bend Command–4
- ▶ Channel Pressure Command–5
- ▶ Key Pressure Command–6
- ▶ Modulation Command–7

▶ Controllers Command–8
▶ Program Change Command–9
▶ Conductor Track Command–0

If the window is open but hidden behind other windows on the screen, you can bring it up to the foreground by choosing it on the Windows menu or with its Mac keyboard command.

All seven of the MIDI Data windows look and work alike, and are very similar to the Step Editor window as well. Most of each window is devoted to a data area, where individual MIDI events appear as vertical linesor points. The height of each line or point corresponds to the numeric value of the event, while the horizontal location of the line or point specifies when in the track the event occurs. You can see event data for one track at a time in the data area.

You can toggle the display from lines to points by presing any key on the Mac keyboard when the MIDI data window is active.

At the top of each window, just below the window title bar, you'll see a single row of icons and data, the menu bar. The three icons in the left portion of the menu bar are used to select different editing operations (see the section below on editing event data).

To the right of the icons, there's a time indicator that displays the horizontal position of the cursor in the track, in measures, beats, and clock ticks. Next there's a value indicator, that gives the data value corresponding to the cursor's vertical location in the data area. Finally come boxes showing which track's data is currently on display, and what channel will be assigned for new event insertions.

Just below the menu bar is a row of mostly empty space, the marker ruler. This is where the markers you've placed in the Song Editor window, if any, will be visible. You can hide the marker ruler with the Hide Marker command on the Layout menu if you like. This expands the data window. See Chapter 12 for details on how to use markers.

Below the marker bar is another horizontal bar, the measure ruler, which marks the position of measures and beats in the track.

scrolling

Use the scroll bar controls to move the MIDI Data window displays just as you would with the Song Editor or Step Editor, or with scrollable windows in other Macintosh programs. Use the measure ruler to keep track of where you are in the sequence as you scroll.

moving to a marker

You can also move to markers that you placed in the sequence on the Song Editor window. Press Tab to move each successive marker. Press Shift-Tab to move to a previous marker. Playback position can be determined by clicking at the desired location in any Midi Data Window, with Auto turned off in the Transport , the same way as in the Song and Step Editor Windows.

zooming in and out

You can use the Zoom In and Zoom Out commands on the Layout menu to see more of the MIDI data on screen at a time, or to get a close up view of a small amount of data for precise work. To move in one zoom level, choose the Zoom In command on the Layout menu, or type Command-[on the Mac keyboard. To zoom out one level, choose Zoom Out, or type Command-].

The Zoom level you use determines how many clocks per screen pixel are displayed. The smallest distance on the screen you can move the mouse pointer is a pixel. When you are zoomed all the way out, each pixel corresponds to 24

clock ticks. Zoomed all the way in, a single clock tick per pixel is displayed.

edit resolution

The number of clock ticks per pixel affects the resolution with which you can edit data in the MIDI Data windows. When you are zoomed all the way out, for example, you can only edit events at 24-clock tick intervals. When you are zoomed all the way in, you can edit an event at any clock location. If you wish to change or erase an event that doesn't fall at one of the clock tick intervals of your current Zoom level, you must zoom in for higher resolution editing.

Note that the more you zoom in, the more individual events you can place in the sequence. Zooming in gives you more precise control over the placement of each event, but you can easily use up large amounts of memory, and the sequence is forced to send data much more rapidly. Use the Zoom level that matches your needs for precision, memory, and data density.

Consult Chapter 12 for more details on how to use Zoom commands.

switching tracks

To view or edit MIDI event data on another track, click over the Track box in the menu bar. A Change Value window pops up, and you can either type in the desired track number from the Mac keyboard, or change it by clicking on the arrow controls in the window. When you've entered the correct track number, click on OK. The Change Value window will disappear, and the Event Editor window will now display data for the new track.

Editing MIDI Data

As in the Step Editor window, you use various mouse pointers to make different kinds of changes on events in the various MIDI Data windows.

selecting a region

To use the commands in the Edit or Change menus on MIDI Data window data, you must first select a region within the track. To select a region for global changes, use the arrow pointer by clicking on its icon in the menu bar. Move the pointer to the left edge of the region you want to select, using the time indicator in the menu bar to help you locate the desired point in the sequence precisely. Then click on the mouse, and drag across the selected region to the right. As you move the mouse, the region will be highlighted in inverse video.

When you reach the right edge of the region, release the mouse button. You can now perform Edit and Change menu operations on the selected region. For the most part, these changes will only apply to the type of data displayed in the window (see the discussion in Chapter 9 on how different types of data are affected by the Edit menu commands in the MIDI Data windows.)

inserting events

The ability to enter MIDI events graphically is one of Master Tracks Pro's most powerful features. To insert individual MIDI events or modify existing ones, you select the crosshair pointer by clicking on the pencil icon in the menu bar.

Before inserting a new MIDI event, however, you can use the Channel box in the menu bar at the top of the window to select the MIDI channel for the new event. Click on the Channel box to bring up a Change Value window, and enter the desired channel number by typing it in or adjusting it with the arrow controls. Click on OK or press Return to finalize the change.

To insert a single event, move the crosshair to the position in the data area where you want the event to go. Use the time indicator in the menu bar to locate the exact time in the track where you want to insert the event along the horizontal axis of the graph. Use the value indicator to position the cursor vertically for the correct value.

Now simply click the mouse. A vertical line will appear, extending from the graph baseline to the height representing the data value.

You can insert multiple consecutive events simply by holding down the mouse button and dragging the cursor to draw a curve on the data area. This makes it easy to add smooth pitch bend or mod wheel changes.

When you insert consecutive events, the graph will appear to be filled in with solid black under the curve you draw. Each event along the curve can still be edited individually.

The Zoom level you're currently using affects how many events are inserted when you draw in a curve by dragging the mouse across the data area. Depending on the Zoom level, each horizontal mouse position can represent as many as 24 clock ticks or as few as 1.

If you're zoomed all the way out when you draw consecutive events, you'll get a new event every 24 clock ticks. When you're zoomed all the way in, you get a new event with every clock tick. Be cautious about entering consecutive events when you are zoomed in, because you can use up memory quickly and you may force the program to send data too rapidly. The Midi Data stream can only support 3120 bytes per second.

A good way to enter a series of consecutive events is to draw them in when you are zoomed out to save memory, and then zoom in to edit them precisely. When you zoom in, you'll see the solid black graph resolve into individual event lines, making it easy to position the cursor.

changing existing MIDI events

To change events that are already stored in the track data, just insert a new event at the same time. When you do, the old event will be erased.

thinning out dense MIDI data

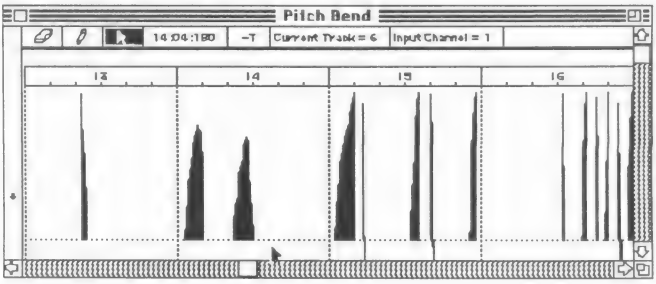
If you have a section of MIDI data that is denser than necessary,you can thin the MIDI data by tracing over their curves with the mouse at lower resolutions (Zoomed out).

erasing events

To erase individual events, click on the eraser icon in the menu bar to select the eraser cursor, a crosshair within a circle. Move the cursor directly over the event you wish to erase and click. The event line will disappear.

the pitch bend window

Pitch bend data can take either positive or negative values. When a note is not being bent it has a pitch bend value of 0.



So in the Pitch Bend window you'll see a horizontal dotted line running through the middle of the data area marking the zero point. The area above the line, which represents positive pitch bend values, is marked with a "+" in the left border. The area for negative values below the line is marked with a "—". Positive values range to +127 and negative values go down to -128.

You can switch between two options for displaying pitch bend and other MIDI data. Normally, the data appears as vertical lines. However, if you press any key on the Mac keyboard while you're working with any MIDI Data window, each event is displayed as a single dot in the graph. Pressing another key will toggle back to the normal display.

channel pressure

Channel Pressure, also known as Aftertouch affects all notes on a given MIDI channel. It has a range of 0 to 127.

key pressure window

Key Pressure, also known as "polyphonic" aftertouch, affects individual MIDI notes. To use this parameter, you must first specify the note you want to assign the key pressure event to by entering its pitch in the appropriate box at the far right of the menu bar. A box will pop up, and you can either type in the note's pitch or play the note on your MIDI controller. The value range for Key Pressure is 0 to 127.

modulation window

Modulation refers to the "Mod" wheel(or lever) found next to the Pitch Bend wheel on many synthesizers. It is MIDI Controller #1 and you could also edit or create Modulation Data in the Controllers Window. Like many other controllers, it has a range of 0 to 127.

controllers window

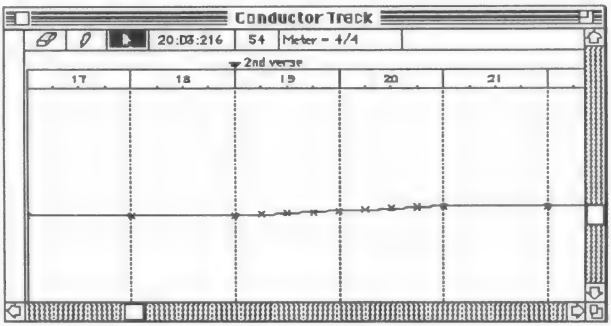
Since MIDI allows multiple controllers, the Controllers window lets you specify the controller number for each event in the window. You must select the controller number before you insert the event (consult the owner's manual of your MIDI device for valid controller numbers and their associated range of values).

Click in the appropriate box at the right of the menu bar. Enter the controller number in the box that pops up, and click on OK or press Return to enter it. Then insert events just as you normally would. You can switch to a new controller number at any time. Refer to the Controllers List in Chapter 14.

program change window

The Program Change Window lets you view, enter and edit program changes. Sendig a program change on a given MIDI channel will affect all MIDI devices listening to that MIDI channel. The range of Program numbers is 1 to 128.

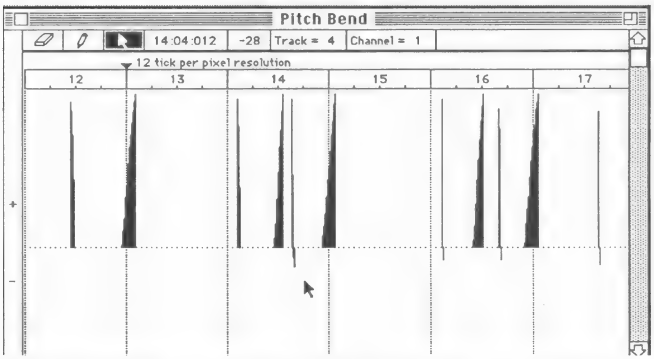
conductor track data window



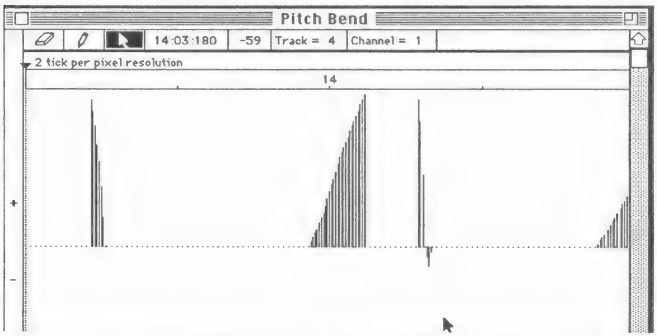
The Conductor Track Data Window shows a graphic representation of the Conductor Track. Like other MIDI data windows, the tempo values can be edited with the pencil and eraser cursors, but unlike the other data windows, selecting an area with the arrow allows only Change operations to that area in the Conductor dialog box. The other Edit Menu commands are inactive. Tempo changes may be entered on any clock boundary (240 clocks per quarter note). A tempo indicator appears at every measure boundary. These cannot be erased but can be changed with the pencil.

This window is intended as a graphic representation for viewing and allows for very precise editing of the conductor track. Broader editing such as smooth changes over a selected region should be performed in the conductor dialog box from the Change menu. The results will then be visible in the Conductor Track Data Window.

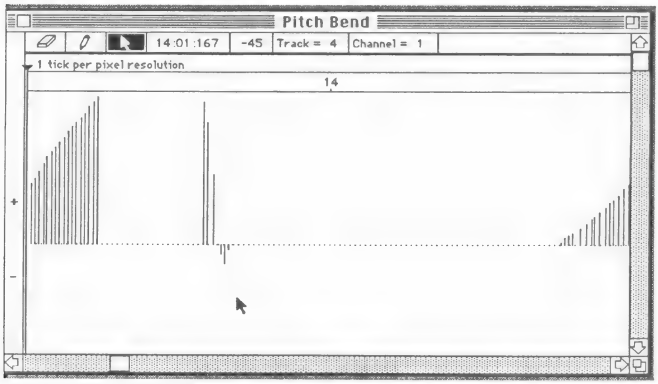
resolution or 12 ticks per pixel



resolution of 2 ticks per pixel



resolution of 1 tick per pixel



3 Using the File Menu

The File menu has a variety of commands that let you manage your sequence files. These commands work just as they do in most other Macintosh applications, so if you've had any previous experience with the Mac you'll already be familiar with how to use them.

The File menu includes the Preferences command, which allows you to set up the program the way you like, and store that setup on your Master Tracks Pro working disk.

MIDI Files are an industry standard format for storing MIDI sequences. If you own any programs that support this new format, you will be able to share sequence files with these programs. You can save your sequence as a MIDI File (Export), or Import a MIDI File created with another program.

about sequence files

A Master Tracks Pro file is a single sequence, either in its temporary form in your Macintosh's memory, or stored more permanently on a disk. A file is *open* when you're working with it in your Mac's active memory, whether you loaded it from disk or started a new sequence from scratch. When you close a file, it is removed from memory, and you can only work on it again by reloading it from the disk.

You can only have one sequence file open at a time in Master Tracks Pro. If you're already working on a file, Master Tracks Pro gives you a chance to save it when you create a new file or when you load a file from disk.

Be sure to **save your sequence files frequently while you work with them**, so that you don't lose your work because of a power failure or other problems with your system. You can store files on any disk or drive in your system, as long as there is enough space, using options in the Save and Save As... commands.

starting a new file

To create a brand new sequence, choose the New command on the File menu or press Command-N on the Mac keyboard. Since you can only have one file open at a time, this command closes the file you've been working on, if any, giving you a chance to save it first if you like.

When the new file is opened, any windows you had open remain on screen in the same position, but all the existing data disappears. Master Tracks Pro calls the new file "Untitled" until you rename it with a name of your own choice using the "Save As" command (the file name is always displayed in the Transport window title bar).

opening an existing file

Choose the Open command or press Command-O on the Mac keyboard when you want to load an existing disk file into Master Tracks Pro for playback or further editing. When you choose the Open command, Master Tracks Pro will first give you a chance to save the file you're currently working on, if any.

Next, a dialog box will pop up, showing the name of the disk in the currently selected drive at the upper right, and the names of all the Master Tracks Pro files stored on that disk in a scrollable box at the left. If the list of files is too long to fit into this box, you can use the scroll bar at the right side to scroll

through the list to the file you want.

If the file you want is on a disk in another drive, click on Drive to select another drive. If you want a file on a disk that's not currently in a drive, click on Eject, wait for the drive to eject the disk, and insert the disk you want.

Once you've located the file you want to open, click over any portion of the name. The name will now be highlighted, indicating that it is selected. If you make a mistake, you can select a new file name just by clicking on it. When you've selected the correct file, click on Open. The dialog box will disappear, and Master Tracks Pro will load the file.
Another way to open the file is simply to double click on its name, either when it shows up in the dialog box while you are running Master Tracks Pro, or from the Macintosh finder. If you do this from the finder, Master Tracks Pro will automatically be loaded (if it can be found on the available disks at the time), and your file will be opened for use.

After the file is opened, the same set of windows you were using before you opened the file will still be on the screen, but the data in the windows will now be from the newly opened file.

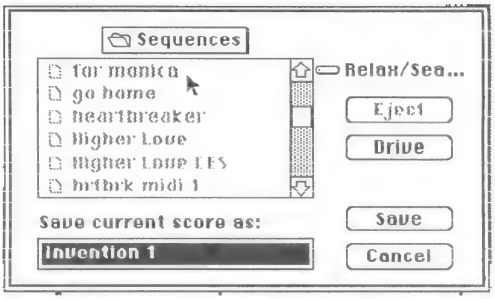
closing a sequence file

Use the Close command to end work on a particular file without leaving Master Tracks Pro. When you choose the Close command, you'll be given an opportunity to save your current work if you've made any changes since it was last saved.

All windows you've been using remain on the screen, but they are now empty of data. Essentially, the Close command gives you another way of starting a new sequence.

saving a sequence file

The Save command stores the sequence that's currently open on disk, if an earlier version of the file has already been saved. As soon as you choose the Save command or press Command-S on the Mac keyboard, Master Tracks Pro will save the current version of the sequence in the same disk file, without any further action on your part, overwriting the existing file of the same name.



using the Save as... command

If your file has not been saved before, or if you haven't made any changes since the last time you saved it, the Save command is disabled and appears in grey instead of black on the File menu. To save a file for the first time, or to resave a file that has already been saved, use the Save as... command instead.

The Save As... command lets you save a new file for the first time, or resave a file that has previously been saved, using a new name if you wish. You may also save your file on a different disk. In addition to its importance for saving new files, this command is especially useful when you want to store your latest edits as a different file to avoid erasing an earlier version of the sequence.

When you choose the Save As... command, a dialog box appears, which allows you to choose a name for the file before you save it. The field where you enter the file name is labeled "Save current score as:." If you're saving a new file, the program will supply the name "Untitled" in the file name field. If you're saving a previously saved file, the current name of the file appears in the file name field.

If you want to change the name supplied by the program, type in the new name. If you leave the file name field highlighted, the name in the field will disappear as soon as you start to type in the new name.

The Save As... dialog box also lets you select the drive and disk where you want to store the new version of the file. At the right side of the box, you'll see the name of the disk in the currently selected drive. Click on Eject to eject the disk. When the disk pops out, insert the disk you want to use. Or click on Drive to select another drive for the save operation.

If you decide you don't want to save the file after all, you can click on Cancel at any time. To go ahead and save the file with its new name, click on Save. After a few minutes, you'll be returned to the main Master Tracks Pro screen.

using the Revert to Saved command

Choosing the Revert to Saved command loads the disk version of the file that you're currently working on, restoring the file to the way it was when you last saved it. Use this command when you've made changes in a sequence that you know you don't want to keep.

When you choose the Revert to Saved command, Master Tracks Pro pops up a dialog box asking you if you're sure that you want to discard the changes you've made since the last time you saved the file. If you want to go ahead with the command, click on Yes, and the last saved version of the file will be loaded, replacing the data that was in memory. To cancel the command, click on Cancel.

customizing your screen display

The Preferences command lets you customize Master Tracks Pro's window display and other settings to your personal tastes. When you choose Preferences from the File menu, the program takes a "snapshot" of the current positions and sizes of any open windows on the screen, and also records the data elements in the Layout menu, (Show/Hide Grid, Show/Hide Markers, Follow Playback, and Zoom resolution), the Goodies menu (Keyboard, MIDI Setup, and Record Filter parameters), and all settings in the Transport Window (Auto, Thru, Metronome, Count In, and Key). All of this information is saved on the program disk in a special "Preferences" file.

The next time you start Master Tracks Pro, the program will read the Preferences file as it loads, and will come up on the screen with the windows you want open at the positions and sizes you chose. In addition, the settings of the functions on the Layout and Goodies menus will be as specified in the Preferences file.

importing and exporting MIDI files

MIDI Files are an industry standard format that has been adopted by many software and hardware manufacturers. This allows you to use Master Tracks Pro to play or edit files created on other sequencers or to use your Master Tracks Pro files with other sequencers or notation programs. Both types of MIDI Files are about 35% smaller than a normal

Master Tracks Pro file and thus take less room on your disk and less time to transmit by modem.

When you select EXPORT from the File menu, a dialog box gives you the choice of type 1 or type 0. When you select IMPORT from the File menu, Master Tracks Pro will display any MIDI files on current disks.

Type 0	All channels merged to a single multi-channel track. Channel assignments saved Text and program change assignments not saved. Loop assignments and markers not saved.
Type 1	Parallel multi- channel tracks. Channel assignments saved. Text and program change assignments saved. Loop assignments and markers not saved.

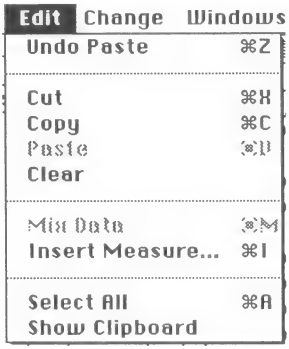
quitting Master Tracks Pro

Choose the Quit command or press Command - Q on the Mac keyboard when you want to end a Master Tracks Pro session. If you haven't saved the file you've been working on when you choose the Quit command, Master Tracks Pro gives you a chance to do so via a dialog box with the message "Save changes before quitting?"

Click on Yes or press Return to save the final version of the file before quitting. Click on No if you want to quit without saving the file. If you decide not to quit after all, click on Cancel.

Using the Edit Menu

Master Tracks Pro's Edit menu contains commands that are used within the Song Editor, Step Editor, or MIDI Data windows to edit MIDI data in selected measures or regions.



To use any of these commands on a specific region, the region must first be selected using the mouse as described in the chapters on the Song Editor, Step Editor, and MIDI data windows. If you want to use an Edit command on an entire sequence or track, you can skip that step by using the File menu's special command, Select All. This command selects the entire sequence at once if chosen when the Song Editor is the active window. If the Step Editor or a MIDI Data Window is active, one entire track will be selected. See the description of the Select All command later in this chapter for details.

The Edit menu capabilities start with basic Cut, Copy, Paste,

and Undo editing commands, much like those you'll find in many other Macintosh programs. With Cut, Copy, and Paste, and a couple of supplemental commands, you can transfer data from any location in a sequence to any other location, or even to another sequence entirely.

Before covering the Edit menu commands individually, there are a few things that you'll want to know about. One thing to be aware of is that some of the Edit commands work slightly differently depending on which window you're working with. Those differences are described with each of the commands.

working with tied notes

There will probably be times when you'll want to select regions in the Song Editor or Step Editor windows that include notes tied from the measure immediately before or after the selection. If the selected region begins on a measure boundary, Master Tracks Pro will recognize the tied notes when you use the Edit menu commands Cut, Copy, and Clear.

When you use one of these commands, the program removes or copies only the portion of the note that falls within the measures in which the selected region is located. With the Cut and Copy commands, this portion of the note is moved to the clipboard, and appropriate note–on and note–off events are added to it to make it a complete event. When you use Cut or Clear, the program also removes this portion of the note from the sequence, and inserts new note–on and note–off events for the parts of the note that remain.

about the clipboard

The *clipboard* is the temporary storage location for MIDI data that Master Tracks uses when you move or copy within a sequence, or from one sequence to another. For faster performance, the Master Tracks Pro clipboard is stored in RAM, the computer's internal memory, and not on disk like some Macintosh clipboard files. The effect of this is to speed up editing considerably. But there is a trade–off. The problem with this approach is that the data in the clipboard will be lost if you lose power or the computer fails for some other reason. Don't expect the clipboard file to be saved when you power down your computer. You must paste it into a sequence and save it using the File menu commands.

the Undo command

At the top of the Edit menu is the Undo command, which can also be executed by pressing Command–Z on the Mac keyboard. This command allows you to cancel the last alteration you made to your sequence with the commands on the Edit or Change menus. You may also Undo your most recent recording. Remember, though, that Undo only applies to the last change you made in the sequence. As soon as you use another Edit or Change command or start recording a new track, the change is now pemanent and can no longer be removed with Undo.

cutting

Use the Cut command to remove MIDI data from the region you've selected, and place it in the Master Tracks Pro clipboard. You can execute the Cut command by choosing it from the Edit menu, or by pressing Command–X on the Mac keyboard.

The exact way that data is removed by the Cut command depends on how you've selected the data:

- If you've selected one or more entire tracks in the Song Editor window, the Cut command removes their data entirely.
- If you've selected the entire sequence using the Select All command, or with the mouse in the Song Editor window, Cut removes all data.
- If you select one or more adjacent measures across *all* tracks in the sequence, the measures are completely removed and the remainder of the sequence is shifted to the left to fill in the gap.
- If you select a region within a track or tracks, but not all tracks in the song, Cut removes the data but leaves the measures intact. In other words, the rest of the data in the track(s) is *not* shifted to the left to fill in the gap. This is done to preserve the Conductor template across all the tracks. After this sort of cut, you'll see hollow measure bars indicating empty measures in the Song Editor window.

Remember, a Cut command can be reversed with the Undo command.

The Cut command and the various windows:

- On the Song Editor window, Cut works on all data types in the selected region.
- On the Step Editor window, Cut works only on note data.
- On a MIDI data window, Cut works only on the type of data displayed in that particular window.

copying

The Copy command makes a copy of the data in the selected region and puts it in the Master Tracks Pro clipboard. The existing data is not changed. In addition to selecting the Copy command with the mouse, you can also execute it by pressing Command–C on the Mac keyboard.

The Copy command's effect varies, depending on which window you are working in:

- On the Song Editor window, Copy copies all data types to the clipboard.
- On the Step Editor window, Copy only copies note data.
- On a MIDI data window, Copy only copies the type of data displayed in the window.

pasting

Paste places the contents of the clipboard into the sequence beginning at the location of the blinking cursor. You can choose the command with the mouse, or use Command–V from the Mac keyboard.

If the clipboard contains data from more than one track, data from the lowest numbered track in the clipboard goes into the track marked by the cursor. Data in the clipboard from subsequent tracks are automatically inserted into the next tracks in order.

To use Paste, first select an insert point by placing the cursor at the beginning of the measure where you want to insert the clipboard data. Then select the command. The data you paste in replaces any existing data in the sequence. (To merge the clipboard data with the existing data, use the Mix Data command.)

You can paste data into empty tracks anywhere you like. Just position the cursor at the measure location where you want the pasted data to start, and execute the command. Remember, too, that you can Paste clipboard data from one sequence to an entirely different sequence if you wish.

The Paste command works with the various windows as follows:

- ► On all windows, Paste places all the contents of the clipboard into the track, even if the clipboard includes data of another type than displayed in the active window.
- ► On the MIDI data windows, paste will only place the type of data cut or copied to the appropriate Data Window. (see Change Continuous to move from one Data type to another)
- ► On the Step Edit and MIDI Data windows, if the clipboard contains data from multiple tracks, you'll place data from the lowest # track only.

clearing

Clear works exactly like Cut, except that the data is removed without placing it in the clipboard. This gives you an alternative way to remove portions of your sequence. You may find it useful when you want to remove data from your sequence, but you don't want to erase the contents of the clipboard.

To use the Clear command, choose it from the Edit menu after you've selected the region you want to clear. Alternately, you can simply press the backspace key after selecting a region.

The Clear command and the various windows:

- ▶ On the Song Editor window, Clear removes all data types.
- ▶ On the Step Editor window, Clear only removes note data only.
- ▶ On a MIDI data window, Clear only removes the type of data displayed in the window.

mixing data

The Mix Data command works identically to the Paste command, except that the data in the clipboard that you're inserting in the sequence is merged with existing data already in the sequence.

To use the Mix Data command, first place the blinking cursor to the left of the first measure in the block where you want to place the clipboard data. Then choose the Mix Data command from the Edit menu, or type Command–M on the Mac keyboard.

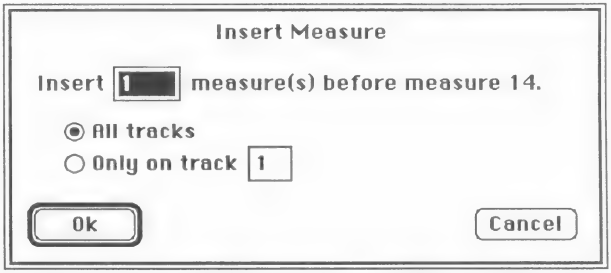
- ▶ Only one track can be mixed at a time with another. So if you want to "bounce down" several tracks to a single track, you must do them one by one.

inserting measures

With the Insert Measure command, you can lengthen the sequence by adding empty measures within it. You might use this command to insert a new section into the middle of a composition or to add a blank space or countdown to the beginning.

You can use the Insert Measure command from the Song Editor, Step Editor, or MIDI data windows. No matter which window you're working in, you may insert measures in all the tracks in the sequence, or only a single track. The newly inserted measures will all have the same meter and tempo as the last measure prior to the inserted section. Use the Change Conductor command in the Change menu to alter these timing settings.

When you choose Insert Measure, or type Command-I on the Mac keyboard, a dialog box pops up on screen. Type in the number of measures you wish to insert, and if you wish to affect all tracks or just a single track. Click on OK or press Return to confirm your entry. Click on Cancel to return without inserting measures.



The steps you'll take to use the Insert Measure command vary slightly depending on whether the Song Editor window or the Step Editor window is currently active.

In the Song Editor window, place the cursor at the beginning of the measure before which you want to insert the new measure(s). After executing the command, the new measures will appear on the screen as hollow measure boxes, indicating they are empty of MIDI data, with the cursor positioned at the beginning of the first measure in the inserted group. All the remaining measures in the sequence will have been pushed to the right and renumbered.

For example, say you want to insert two measures beginning after the eighth measure in the sequence, and just before what's now the ninth measure. Place the cursor between the eighth and ninth measures and select the Insert Measure command. Once you've completed the insertion, the newly inserted measures will be measures nine and ten, while what was formerly measure nine will now be measure eleven.

In the Step Editor window, use the arrow pointer to select any region in the measure before which you want to insert the new measure(s), and then give the command. After a brief pause, you'll see the new empty measure(s) on the screen,

and the remaining measures will be renumbered to reflect the insertion.

select all

The Select All command lets you select the entire sequence or track for use with the editing commands. From the Song Editor window, just choose Select All from the Edit menu, or type Command–A on the Mac keyboard. Any visible data becomes highlighted, indicating that it is selected. In the Step Editor and MIDI data windows, Select All selects the entire track you're working with.

show/hide clipboard

Show Clipboard pops up a small window which describes the current contents of Master Tracks Pro's clipboard. The window tells you which tracks and bars the data was copied from, how long the data lasts in bars (measures), beats, and clock ticks, and whether the data was cut or copied.

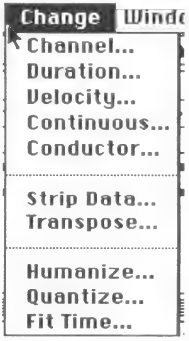
The Clipboard window remains on screen until you close it, although it's likely to get buried under other screen windows. If you like, you can leave the clipboard window open on the screen. If it gets hidden behind other windows, however, you must either move or close them to see the clipboard window again, or choose Show Clipboard from the Edit menu.

10

Using the Change Menu

While the Edit menu commands let you move or delete regions of notes, the Change Menu contains commands that allow you to regionally alter MIDI and timing data in sophisticated ways. All of the Change menu commands work on any region you select in the Song Editor, Step Editor, or MIDI data windows.

Included are commands for changing MIDI channel, note duration, note velocity, continuous MIDI data, and tempo and meter in the selected region. There are also commands for stripping different types of data out of a track, transposing pitch, and for changing the rhythmic relationships of MIDI events.

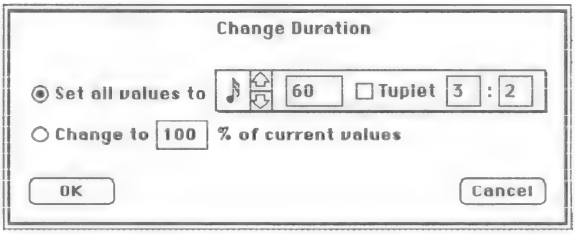


As with Edit menu commands, you must first select a region before you can use the Change commands. To select a region, use the mouse as described in the chapters on the Song Editor, Step Editor, and MIDI data windows.

change channel

This command permanently changes the MIDI channel assignments of all the data in a selected region to a new channel number. After selecting the region, choose the Channel... command from the Change menu.

When the Change Channel dialog box appears, type in the channel number(1 to 16) you wish to assign to the data in the selected region. Click on OK or press Return on the Mac keyboard to complete the process. Click on Cancel to exit from the command without making any changes.The Channel setting on the Sequencer Window must be set to "0" or else the channel assignment there overrides this command.



change duration

Choosing the Duration... command pops up a dialog box that allows you to alter the duration of each note in the region—how long it plays.

The dialog box gives you two choices for changing note durations.

The first option in the box lets you set all notes in the region to a specified duration. Activate this option by clicking in the circle next to it. A solid black dot appears within the circle when the option is selected.

Next, select the duration you wish by using the arrow controls to choose the appropriate note duration icon.

To select a tuplet resolution, click on the box next to "Tuplet," and enter the tuplet values you wish by clicking on the appropriate boxes and typing in the new numbers.

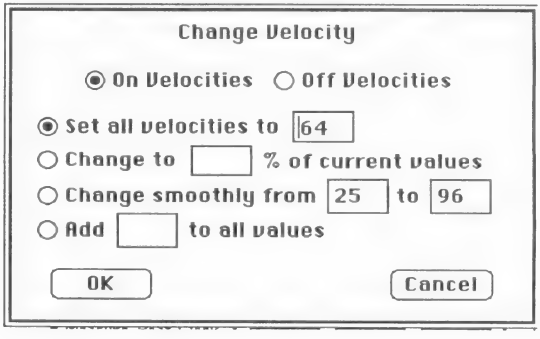
Based on the duration you choose, the number of clock ticks each note will receive in the region appears in a box to the right of the arrow controls. If you prefer, you can type in any duration value, expressed in clock ticks, you wish into this box.

The second option in the Change Duration dialog box allows you to scale all duration values in the selected region by a percentage of their current values. Again, click on the circle beside this option to select it, so that the solid black dot appears. Now type in the percentage of the current duration values, within the range of 1 to 999%, you wish to use. With this option, the relative timing of all the notes is preserved.

After selecting the option you wish, Click on OK or press Return to complete the command, or click on Cancel to return to your work without making any changes.

change velocity

The Dialog box that pops up when you choose the Velocity... command lets you change the velocity values for all notes in a selected region.



Changing velocity is useful for adding punches to a track or to mix the loudness of a track or passage relative to other tracks. It can also be used to bring velocity values up or down over time to create swells, crescendos, and decrescendos.

First, you need to decide whether your changes will apply to note-on velocities, note-off velocities, or both. Click over the circle to the right of one or both of these choices in the dialog box. Most synths do not transmit or recognize note-off velocities.

Next, you can decide from among four options for altering the velocity values. Click over the circle next to the option you select:

1. You can set all velocity values in the region to a specific value.

2. You can change all velocity values by a specific percentage.

3. You can have all velocity values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.

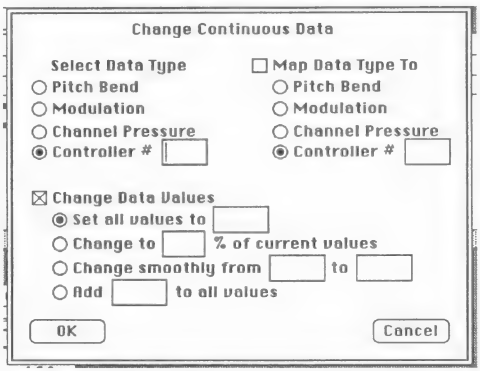
4. You can add or subtract (with a minus value) a set amount to all velocity values in the region.

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen. Click on OK or press Return to enter the value.

Valid MIDI velocity values are between 1 and 127. A velocity value of "0" is the same as a "note off" command. If you enter a velocity value below 1 or above 127 in options 1 or 3 above, Master Tracks Pro will tell you that the value is out of range. You'll then be returned to to the Change Velocity dialog box with a highlight on the invalid value. If the values you've entered in options 2 or 4 throw existing velocity values out of the valid range, Master Tracks Pro will clip them to 1 or 127 as appropriate.

change continuous

Choosing the Continuous... command brings up a powerful dialog box that lets you alter data from any continuous MIDI controller, such as a pitch bend wheel, a modulation wheel, aftertouch (channel pressure), or a numbered MIDI controller. You can use this command to map data from one MIDI controller to another, change the values of the controller data, or both.



mapping data

By mapping one type of MIDI data to another type, you can send data recorded from one controller to a MIDI device that responds to a different controller. For instance you can map pitch bend information to channel pressure if you like.

To map one data type to another, first select the type of data you wish to operate on in the selected region from the choices listed under "Select Data Type" at the top of the dialog box. Click on the circle next to the choice you select so that a smaller solid black circle appears. If you've chosen the Controller # option, you must also type in its number in the corresponding box.

Next, click in the box labeled "Map Data Type To" at the right of the dialog box. An "X" will appear in the box. Now choose the data type to which you want to map the existing data by clicking in the circle next to your choice. Again, you must type in a number if you select the Controller # option. See Chapter 14 for a list of Controller numbers.

changing data values

To change data values, you must first select the type of data you wish to work on, if you haven't done so already, as described above. Next, click in the box labeled "Change Data Values" so that an "x" appears in the box. You now have four choices:

1. You can set all values in the region to a specific value.
2. You can change all values by a specific percentage.
3. You can have all values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.
4. You can add or subtract (with a minus value) a set amount to all values in the region.

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen.

If you are mapping data to another controller at the same time you are changing data values, the changed values will apply to the controller you are remapping the data to.

Once you've made all your choices, click on OK or press Return to complete the command. Click on Cancel at any time to exit the dialog box without making any changes.

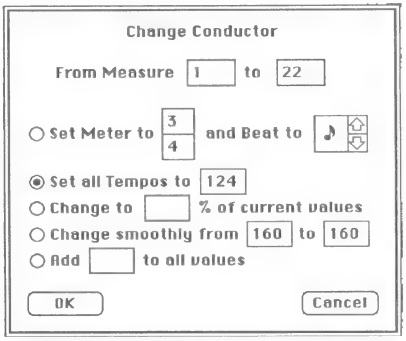
NOTE: If there is no controller data present in the track to change, changing data values will have no effect on the track. There must be at least one data value either recorded or inserted (entered) in order for a change to occur.

change conductor

Master Tracks Pro has a separate Conductor track with which you can determine the rhythmic structure of your entire sequence. All tracks in the sequence follow the settings in the Conductor track for meter, tempo, and the type of note that gets the beat, but you can vary these settings from measure to measure as often as you like. You can even change tempos gradually for ritardandos and accelerandos anywhere in your sequence.

The vertical grey bar in the Song Editor window represents the end of the Conductor track.

Choose the Conductor... command on the Change menu to bring up the Change Conductor dialog box. Optionally, you can access the Change Conductor dialog box from the Conductor window by clicking on the time signature in the window.


Change Conductor
From Measure 1 to 22
Set Meter to 3/4 and Beat to
Set all Tempos to 124
Change to % of current values
Change smoothly from 160 to 160
Add to all values
OK
Cancel

Unlike other Change menu commands, you don't have to select a region before you use the Conductor command. If you have selected a region, however, the first and last measures in the region will appear in the appropriate boxes at the top of the dialog box. You can define a new region by typing in different measure numbers.

changing meter

If you wish to set the meter or beat note for the region, click on the circle next to that option in the dialog box. Then type in the new meter values. Select the note icon for the beat note with the arrow controls at the right. In 4/4 time, if a quarter note beat is selected, you will hear 4 beeps per measure from the metronome with an accent on each first beat and you will see four main divisions in each measure in the Step Edit Window. If you change the beat to an eighth note, you will now hear 8 beeps per measure and see 8 main divisions per measure. Tempo will now be half speed since it is measured in "beats" per minute so you may wish to double the tempo for this region.

You have four options for setting a new tempo in the region:

1. You can set all tempo values in the region to a specific value.

2. You can change all tempo values by a specific percentage.

3. You can have all tempo values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.

4. You can add or subtract (with a minus value) a set amount to all tempo values in the region.

tempo range

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen. The range of permissible values for tempo setting is 10 to 300 with beat set to quarter note, but with beat set to sixteenth note, tempos can be up to 1200 BPM. If you enter a value outside this range with option 1 or 3, Master Tracks Pro will highlight the illegal value and ask you to change it before you can return to your work. Any existing tempo values changed by options 2 or 4 so that they are out of range will be truncated to the maximum or minimum values.

Click on OK or press Return to complete the Conductor command. Click on Cancel to exit the command without making any changes.

conductor template

The Conductor track allows you to have multiple meters in the same song. One way to use multiple meters is to create the rhythmic structure of your sequence with the Conductor track before you record any music. The Conductor track is equivalent to a "tempo map" and a "meter map" combined into a single structure. Use the Conductor command to define meter and tempo for each section in turn. Once you've created this Conductor template, you can record your music, and the program will automatically shift meters at the correct measures as you record.

To see how this process works, try this example: First, select New from the File menu to clear the Mac's memory. Now choose the Conductor command from the Change menu. Set bars 1 to 4 to a 4/4 meter at 100 beats per minute with a quarter note beat. Now choose the Conductor command again, and set bars 5 to 8 to 3/4 at 140 beats per minute. Choose the command a third time, and set bars 9 to 12 to 2/4 at 80 bpm.

In the Song Editor window, you'll now see that you have a 12 bar score. If you move the transport with the fast forward button, or "play" the empty sequence, you'll see the tempo and meter settings in the Conductor window change as you reach each new section of the Conductor track. You can view the Conductor track graphically by pressing Command–0 or choosing Conductor from the Windows menu.

If you wish, you can save a Conductor track template as a disk file before you enter any music, and use it for as many separate sequences as you like.

strip data

The Strip Data command lets you cut or copy selected types of MIDI data from the edit region. Among the types of data you can cut or copy are data from a particular MIDI channel, various types of MIDI controller data, or a range of notes.

You can select any combination of these data types each time you use the Strip Data command. For example, you could copy only notes above middle C and pitch bend data, both from channel #4.

The selected data types are cut or copied to the clipboard. You can then paste them back into your sequence anywhere you like using the Paste or Mix Data commands on the Edit menu.

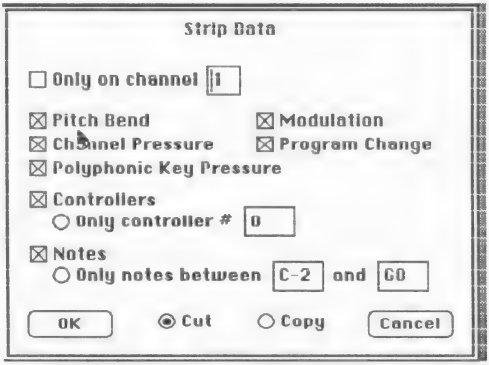
By selecting various ranges of notes, you can use the Strip Data command to create as many keyboard "splits" as you like. The command can also help conserve memory by removing unnecessary controller data while leaving other data intact.

Select a region and pop up the Strip Data dialog box by choosing Strip Data... from the Change menu. Click in the box or boxes next to the data type(s) that you wish to cut or copy with the command. If you select the Controllers option, you can either cut or copy all numbered MIDI controllers, or you can select a specific controller number.

Similarly, you can either select all notes in the edit region, or only notes in the range you enter. To enter note pitches to define the range, you can either type in the pitch or play the corresponding key on the MIDI keyboard. If you type in the pitch, enter the pitch letter name, a # sign if the pitch is an

accidental, and the octave number. Valid pitch range is from C-2 to G8. All accidentals must be entered as sharps.

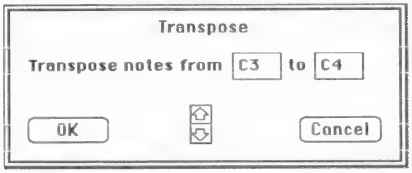
Finally, decide whether you want to cut or copy the selected data types, and click in the circle next to the option you choose. If you select Cut, the selected data types in the region will be removed from the sequence and placed in the clipboard. If you select Copy, a copy of the data will be placed in the clipboard, while the original data remains intact.



When you've finished making all your selections in the Strip Data dialog box, click on OK or press Return on the Mac keyboard. Click on Cancel instead to exit without making any changes.

Another way to cut or copy specific types of MIDI data is to perform the operation from the Step Editor or MIDI Data windows. When you use the Edit menu Cut or Copy in those windows, only the data type you're currently working with is transferred to the clipboard.

transpose



The Transpose command changes the pitch of all the notes in the selected region from one key to another. The Transpose command recognizes individual clock ticks, so you can use it on regions that include portions of measures.

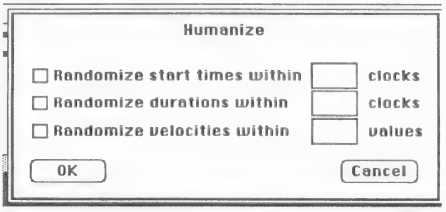
When you choose this command, a dialog box appears, and you are asked to enter the key from which you are transposing, and the new key to which you want to transpose.

To enter these keys, click on the appropriate box, and then type in a pitch letter name, a # sign if you're entering an accidental, and the octave number or play the appropriate note on your MIDI keyboard. Valid pitches range between C-2 and G8. You must enter all accidentals as sharps.

Press Return or click on OK to enter the transposition and return to your work. Click on Cancel to exit without making any changes.

humanize

The Humanize command is designed to make your sequence less machine-like and rigid by randomly shifting the start time, duration, and/or velocity of each note in the selected region.



When you select the Humanize command, a dialog box appears that lets you choose whether to apply the randomization effect to start times, durations, or velocities. Click on the box next to each option you want to select.

Next, you must enter a maximum value to tell the program how large the random changes can be. The Humanize command will add or subtract a random amount from each note in the region, but only within the range set by this value. In the case of start times and durations, type in the maximum number of clock ticks that will be added or subtracted to existing values when the Humanize command goes to work. For velocities, the maximum value is simply a numeric value between 1 and 127.

In practice, very small values work best for achieving subtle variations in highly mechanical music. Large values will produce wide and random changes that are sometimes useful, but not at all predictable.

When you've made your selections, click on OK or press Return to enter them and complete the command. Or click on Cancel to exit without making any changes.

quantize

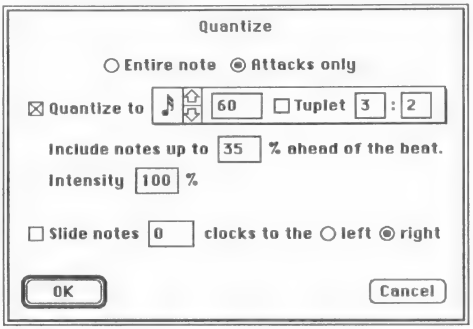
The Quantize command aligns the start times of all notes and other MIDI events in the selected region to an imaginary timing "grid." The grid divides the region into intervals of a set number of clock ticks. When you use the Quantize command, the command moves the start time of every note within the region so that it falls precisely at the begining of the nearest grid interval. You can choose to Quantize the entire note or just the attact times, leaving the note offs at their current locations. This could be used to create a more accurate rhythm while preserving release times of envelopes on synthesizers.

Of course, you'll usually quantize to a grid based on a standard note type, such as to the closest quarter or sixteenth note. But Master Tracks Pro gives you the freedom to quantize to any interval you wish.

percentage ahead of the beat

Master Tracks Pro™ defaults to a Quantize setting of 35% ahead of the beat. In other words, if you are quantizing to 16th note values, it will include (shift, align) any notes which fall from 35% before the current 16th note and up to 65% behind the current 16th note. If a note falls more than 35% early, it will be quantized to the previous 16th note position. This range can be adjusted to your specific situation by entering a different value in the percentage box. If you tend to rush a particular passage you may wish to set the range to include notes that fall a larger percentage ahead of the beat.

The intensity (degree) of quantization is also adjustable. It has a default value of 100 %, meaning that notes will be quantized fully to the note or tick interval you specify. An intensity setting of 50% would move notes only half the distance to the nearest specified interval.



The Quantize command also allows you to shift start times in the quantized region slightly away from the grid interval. This feature is valuable for creating passages that are a little ahead of or behind the beat, sliding the notes in a track.

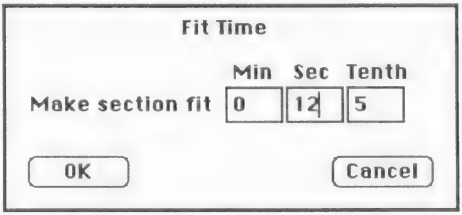
Begin by choosing Quantize from the Change menu to bring up the Quantize dialog box. Then select the quantization value by using the arrow controls to choose the corresponding note duration icon. To select a tuplet resolution, click on the box next to "Tuplet." Then enter the tuplet values you wish by clicking on the appropriate boxes and typing in the numbers.

Based on the duration you choose, the number of clock ticks in each note value will appear in a box to the right of the arrow controls. If you prefer, you can simply type in any duration value you wish in this box. If you wish to slide notes without quantizing them, click in the box next to the words "Quantize to", removing the "x" from it.

intensity

If you wish to select an offset for quantization, click on the box for the "slide notes" option so that an "x" appears in the box. Decide whether you want to slide notes before(**left**) or after (**right**) the grid boundaries, and click on the circle next to your choice. Finally, type in the number of clock ticks that you want for the offset. (240 per quarter note)

When you've entered your selections, click on OK or press Return to complete the Quantize command. If you wish, you can click on Cancel to exit without making any changes.



fit time

The Fit Time command lets you stretch or squeeze a given section of music so that it fits exactly into a particular amount of time. It works by scaling all the tempos in the Conductor track for the selected region proportionally, so that the relationships between any existing tempo or meter changes in the region are preserved. In this way, you don't lose the feel of the music.

Fit Time works only on whole measures. For best results, you should only use it on relatively short passages, but they should be at least three measures long.

Fit Time isn't a complete substitute for true SMPTE sync, but it can be very useful for doing short jingles and commercials, when you have to stretch or compress the total time of a section just a bit.

When you choose the Fit Time command, the dialog box has three data entry boxes, one each for minutes, seconds, and tenths of seconds. When you first pop up the dialog box, these display how long the region would play using the current tempo settings.

Don't try to squeeze or stretch a section a ridiculous amount. The program's tempo range, from 10-300 quarter notes per minute, will limit how much you can change the region with this command. Trying to make a 2 second region fit into 60 minutes is definitely not recommended.

Click on each data entry box in turn and type in the new amount of time you want the region to play. When you've made the entries, click on OK or press Return. Depending on how large the region is, the calculation can take some time.

Using the Windows Menu

The Windows menu provides access to any of the main Master Tracks Pro data windows. If a window is not currently on the screen, or if it is hidden behind other windows, you can bring it to the front and activate it from the Windows menu in one of two ways.

- You can choose the window you wish by name from the Windows menu
- You can press a Command–key sequence on your Mac keyboard.

Here's a brief description of each of the main Master Tracks Pro windows, including the Command-key sequence you can use to call up the window from the Mac keyboard:

sequencer

▶ Command–1

The Sequencer window allows you to see and name all the tracks in your sequence. In addition, it lets you choose which tracks play, record, solo, and loop. You can also enter MIDI channel settings and initial MIDI program numbers for each track in the sequence.

song editor

▶ Command–2

The Song Editor window provides a graphic display of your sequence in units of measures, and shows you where the end of the sequence falls. Blocks of measures can be selected and edited with a variety of powerful commands. You can place and display markers that allow to quickly find specific places in your sequence.

step editor

▶ Command–3

The Step Editor window lets you see and edit MIDI note data graphically. You can input, move, copy, and erase individual notes anywhere on the graph, and you can also edit note parameters numerically. In addition, you can use a step method for note entry, and you can select regions of notes for editing operations.

pitch bend

▶ Command– 4:

The Pitch Bend window allows you to display and edit pitch bend data. You can enter, edit, and erase individual pitch bend events, and you can draw in consecutive events graphically. You can also select regions of pitch bend events for editing operations.

channel pressure (aftertouch)

▶ Command–5

The Channel Pressure window lets you work with MIDI channel pressure data, also called monophonic aftertouch. Using a graph in the window, you can add, edit, and erase individual channel pressure events, and you can also draw them in consecutively on the graph. Regions of channel pressure events can be selected for editing operations as well.

key pressure

► Command–6

The Key Pressure window is the window for displaying and working with MIDI key pressure data, also called polyphonic aftertouch. You can enter, change, or erase key pressure events on the graph in the window, draw in consecutive events, or select regions of events for editing operations.

modulation

► Command–7
(Controller #1)

The Modulation window lets you display and edit MIDI modulation data which usually corresponds to the mod wheel on your synthesizer. The graph lets you input, edit, or erase modulation events, draw them in as a group, and select events in regions for editing operations.

controllers

► Command–8

The Controllers window lets you enter and edit data for any MIDI controller. Using the graph in the window, you can enter, edit, or erase individual controller events, draw them in consecutively, and select them in regions of editing operations. (see the MIDI Controller list pg. 11-4, following)

program change

► Command–9

The Program Change window lets you see and edit MIDI program change events within your sequence. You can insert, edit, or erase individual program change events, you can select them regionally for editing operations, and you can draw them in consecutively if you like.

conductor track data window

► Command–0

The Conductor Track Data window lets you view and edit the Conductor track graphically. Basic changes to the conductor track such as smooth tempo transitions over time and re-barring of sections should be made in the Conductor dialog box from the Change menu. The Conductor Track Data window is intended for viewing and fine adjustments to the tempo. Tempo values can be entered on any clock tick with the pencil and erased with the eraser. Tempo values occur at every measure and these can be changed with the pencil but cannot be erased. They will change automatically to reflect any changes made in the Conductor dialog.

list of MIDI controllers

MOST COMMONLY USED MIDI CONTROLLERS

CONTROLLER #1	MODULATION WHEEL
CONTROLLER #2	BREATH CONTROLLER
CONTROLLER #4	FOOT MODULATION
CONTROLLER #5	PORTAMENTO TIME
CONTROLLER #6	DATA ENTRY SLIDER
CONTROLLER #7	MAIN VOLUME
CONTROLLER #8	BALANCE
CONTROLLER #10	PAN
CONTROLLER #64	SUSTAIN (DAMPER PEDAL)
CONTROLLER #65	PORTAMENTO
CONTROLLER #66	SOSTENUTO (MIDDLE PEDAL)
CONTROLLER #67	SOFT PEDAL
CONTROLLER #92	TREMELO DEPTH
CONTROLLER #93	CHORUS DEPTH
CONTROLLER #94	CELESTE (DETUNE) DEPTH
CONTROLLER #95	PHASER DEPTH
CONTROLLER #96	DATA INCREMENT
CONTROLLER #97	DATA DECREMENT
CONTROLLER #122	LOCAL CONTROL (OFF=0, ON=127)
CONTROLLER #123	ALL NOTES OFF
CONTROLLER #124	OMNI MODE OFF
CONTROLLER #125	OMNI MODE ON
CONTROLLER #126	MONO MODE ON
CONTROLLER #127	POLY MODE ON

12 Using the Layout Menu

The Layout Menu contains several commands that determine the appearance of data windows. These commands can influence your interaction with the program in important ways.

hide/show grid

This command is a toggle that lets you switch between two versions of the Step Editor window grid. The grid always displays a dotted vertical line at each measure boundary, but you have two choices when it comes to the light horizontal lines that represent pitch: you can either choose to display a horizontal line for every "white key," or you can *hide* the full grid and display horizontal lines only at octaves.

The octave grid gives an uncluttered screen, while the full grid provides more help in precise placement of notes.

When the full grid is visible, you can switch to the octave grid by choosing Hide Grid on the Layout menu. Conversely, when the octave grid is on screen, you can switch to the full grid by choosing Show Grid.

Which grid you use is a matter of convenience and personal style.

hide show markers

Hide/Show markers is a toggle command that lets you display or remove the marker ruler from the Song Editor, Step Editor, and MIDI Data windows. (Markers and the marker ruler are described in full in the chapters on the Song Editor window and the Goodies menu).

When the marker ruler is not visible, you can display it by choosing Show Markers on the Layout menu. To remove it, choose Hide Markers. The Song Editor, Step Editor, and MIDI data windows are all affected by this command at the same time. With markers hidden, the Data areas of the windows expand to show more data.

follow playback

When the Follow Playback feature is active, the Song Editor, Step Editor, and MIDI Data windows scroll as the sequence plays, displaying a highlight to indicate the measure that is currently playing. With this feature off, these windows remain as you left them during sequence playback.

To activate the Follow Playback feature, choose it on the Layout menu. When the feature is active, a checkmark appears next to it on the menu.

To deactivate Follow Playback, simply choose it again. The check mark will disappear. When Follow Playback is deactivated, you can scroll to and examine any location in any window independently of the playback transport position.

zoom in/out

The Zoom commands let you choose how much data you see in the Step Editor and MIDI Data windows. To get the big picture on your sequence, use the Zoom Out command to place more measures on the window. For precise work, use the Zoom Out command to show a smaller amount of the sequence at higher "magnification." Six separate levels of zoom are available, so you can easily adjust the display to fit your needs.

The Zoom level set by the Zoom In and Zoom Out commands also determines the number of clock ticks displayed per pixel on the screen, and thus affects the resolution at which you can edit data in the Step Editor and MIDI data windows.

If you zoom all the way in to the maximum level of magnification, each pixel represents a single clock tick. This is the best level for precise work when you're editing notes,

pitch bend, or other MIDI data.

When you zoom further out, the clock tick-per-pixel value increases.

When you move the cursor in one of the windows, it is "snapped" to an imaginary grid with divisions at 8 clock ticks per pixel, 12 per pixel, and so on, up to a maximum of 24 when you're zoomed all the way out. (*a pixel is the smallest dot on the Mac screen and the minimum distance interval you can move your mouse*) You can use this feature to do a kind of manual "quantizing" of notes and other events in the Step Editor and MIDI data windows. Just click on the note or event with the crosshair (pencil), and the event will automatically be moved to the nearest division of the imaginary grid.

You may also want to zoom out when you are inputting pitch bend or other continuous controller data to economize on memory, and to reduce the rate at which the sequence must send data. If you input pitch bend data when you're zoomed all the way in, you create 24 times as much data as when you're zoomed all the way out!

To zoom in one level, choose the Zoom In command or press Command-[on the Mac keyboard. To zoom out, choose Zoom Out or press Command-]. Using either command affects all the data windows on screen.

If your song contains time signatures with bottom numbers smaller than 1/4 note, the Zoom Level will be constrained. A time signature of 1/16 for instance allows a maximum of 2 measures of 4/4 time to be displayed on the screen. (32 measures of 1/16 time will be displayed on the screen at that same Zoom level).

13 Goodies

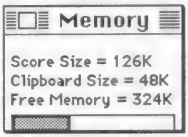
The Goodies menu brings together many powerful and sophisticated features on a single menu and includes many of Master Tracks Pro's unique features.

First, there are simple toggle commands for displaying and activating four screen windows. But then come a set of commands for tailoring Master Tracks Pro to your own system, and for controlling the sequencer from your MIDI keyboard. There's also a special command that lets Master Tracks Pro receive, store, and send MIDI system exclusive information.

All settings on the Goodies menu are saved when you use the Preferences command on the File menu. See Chapter 8 for details.

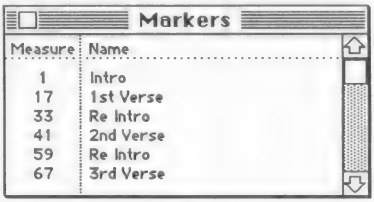
display memory use

Selecting Memory brings up a small window that shows how much memory, in bytes, that your score is using, how much memory is being used by Master Tracks Pro's clipboard, and how much memory is still available. The memory window will remain on the screen until you close it, or cover it with another window. Bring it to the front by selecting Memory again.



markers window

Choose Markers on the Goodies menu to display a window showing locations and names of the markers you place in the sequence on the Song Editor window.



about markers

Master Tracks Pro provides markers that let you identify a particular location in your sequence so that you can return to it any time you wish. Markers always mark the beginning of a measure.

Master Tracks Pro markers look and act much like tab stops in Macwrite and other Macintosh word processing programs. In Macwrite, tabs appear on a special horizontal bar called a document ruler. In Master Tracks Pro, markers are displayed in a horizontal marker ruler in the Song Editor, Step Editor, and MIDI Data windows, just below the title bar of each window.

The marker ruler appears in these windows only if the Show Markers command on the Layout menu is in effect. If you choose Hide Markers on the Layout menu, the ruler will disappear from all the windows.

Markers are placed in a sequence on the Song Editor window, as described in the Chapter 5.

When any of the windows with markers is active, you can move the window data to the next marker in the ruler by pressing the Tab key on the Macintosh keyboard. The data in the window will move so that the measure at the marker is at the extreme left of the window. To move to a previous marker, press Shift-Tab. Again, the data lines up so that the measure marked by the marker is at the left side of the window.

naming a marker

There are two ways to name markers or to change their names. As described in the chapter on the Song Editor, you can double click over a marker to pop up a window that lets you name the marker.

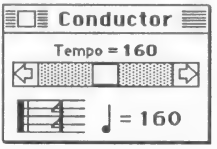
The other way to name markers involves the Markers window, which you can display by choosing Markers from the Goodies menu. When you do, the window will pop up, displaying a table of the markers. For each marker, the table lists its measure location and its name.

To name a marker, or change its name, single click over the name field of the marker on the table. An Enter Text window will appear, asking you to enter the name you want to give the marker. Once you've typed it in, click on OK (or click on Cancel to return without making any changes).

The name you've chosen appears in the marker window, and also in the marker ruler at the top of the other edit windows.

displaying the conductor window

The Conductor window displays basic sequencer timing information, including the meter, tempo, and beat note. It also includes a scroll bar that allows you to control tempo for playback and recording. For a full description of how the Conductor window works, see Chapter 4.



If the Conductor window is not on the screen, or if it is hidden behind other windows, you can pop it up by choosing Conductor on the Goodies menu.

displaying the transport window

The Transport window is where the basic sequencer controls are located, including the Play, Record, Fast Forward, and Rewind buttons. It also includes a pair of sequence counters, and a variety of other functions related to sequence operation. You'll find a full description of the Transport window in Chapter 4.

If the Transport window gets hidden behind other windows on the screen, choose Transport on the Goodies menu to bring it to the foreground, making it active.

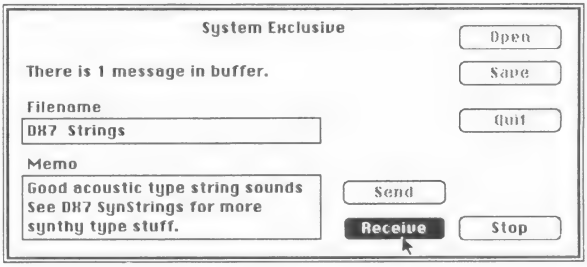
managing system exclusive data

Master Tracks Pro's Sysex feature allows you to send and receive MIDI system exclusive data such as synthesizer patches to and from the MIDI devices in your system. You can store this data in files on disk, and then retrieve it at any time to send to your instrument. Since each instrument has a different system exclusive data format, you can only do "bulk dumps" with Master Tracks Pro---that is, all data is stored and sent in one continuous file, and can't be edited within MasterTracks Pro.

Please note that Master Tracks Pro only supports system exclusive transfers to and from MIDI devices that do not require handshaking. Consult your owners manual to see if your particular device requires handshaking.
To use the Sysex feature, choose Sysex on the Goodies menu. When you do, the System Exclusive dialog box pops up.

receiving sysex data

Before you can receive system exclusive messages from your synths or other MIDI devices, you'll need to know how to send them from the devices. Consult your owner's manuals for instructions.



When you're ready to proceed, click on Receive in the System Exclusive dialog box. Master Tracks Pro will now record any system exclusive data it receives.

Send the data from the MIDI device using the procedure specified by the manufacturer. You can receive up to 64 separate system exclusive messages in one file. When you send the data back to the device later, it will be sent on the same channel it was received on.

To assist you in recording multiple system exclusive messages in a single file, the program counts the number of messages it receives and displays the count. In addition, each time a new message is received, the program attempts to identify the System Exclusive ID byte sent with the message. If it is successful, it will display the manufacturer's name in the memo field in the dialog box.

When you've finished sending the system exclusive data from the device to Master Tracks Pro, click on Stop in the dialog box to shut off the receiving process.

storing sysex data on disk

To store a system exclusive data file, begin by naming the file. Click on the Filename field to enter the name there. You can also place a memo about the data in the Memo box. To do so, click on the box or press Tab and enter your memo.

When you've named the file and written the memo, click on Save. A File dialog box will pop up. You can scroll a list of filenames on the current disk, and switch drives or disks from this dialog box. You also have another chance to name the file for your data.

Once you've chosen the drive and disk where you want to save the file, click on Save on the File dialog box, or press Return. If you decide not to save the file, you can click on Cancel to return to the System Exclusive dialog box.

loading sysex data from disk

To send a system exclusive file to your MIDI device, the first thing you'll need to do is retrieve it from the disk. Click on Open in the System Exclusive dialog box to bring up a File dialog box. This box contains a listing of all system exclusive files stored on the current disk, and allows you to switch disks and drives if you wish.

Once you've located the desired file, you can open it either by double clicking on the name, or by single clicking on the name to highlight it, and then clicking on Open or pressing Return. At any time before you open the file, you can decide not to open it and return to the main dialog box by clicking on Cancel instead.

sending a sysex file to a MIDI device

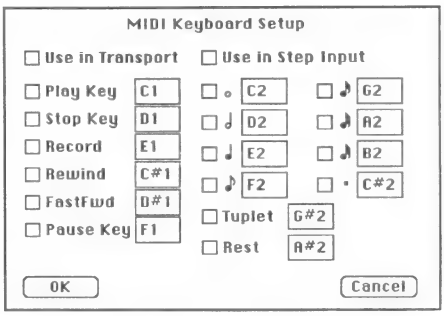
Before you can send a system exclusive file to a MIDI device successfully, you must first get the device ready to receive it by following the appropriate steps listed in its owner's manual. When you're ready, click on Send in the System Exclusive dialog box. Master Tracks Pro will send the file in its entirety. Usually the receiving device will inform you about whether or not the transfer was successful.

quitting the sysex dialog

When you've finished your system exclusive operations, click on Quit in the dialog box to return to the main Master Tracks Pro screen.

MIDI keyboard setup

One of Master Tracks Pro's most useful features is the ability it gives you to operate all the sequencer transport controls and to select durations in the Step Editor using a MIDI keyboard, freeing you from the need to move back and forth between the Mac and your synth.



MIDI transport control

Selecting the Keyboard command pops up a dialog box that lets you configure Master Tracks Pro for MIDI keyboard control of these functions. When you've made your configuration settings, click on OK to enter them and return to the program, or click on Cancel to return without entering the changes. Your MIDI keyboard setup can be stored using the Preferences command from the File menu.
The options for transport control are at the left side of the Keyboard command dialog box. To activate MIDI keyboard control of the transport functions, click on the small box next to "Use in Transport" in the dialog box. An "x" will appear in the box when MIDI keyboard control of the sequencer transport is active. You can turn it off again at any time by clicking on the box again.

Next, assign each transport function in the list (play, stop, record, and so on) to a key on your MIDI keyboard. Click on the larger box to the right of each function and then play the key to which you want to assign that function. Alternately, you can type in the pitch letter name and octave number.

In addition to entering the key you'll use to control each transport function, you must also activate keyboard control of each function individually by clicking over the small box to the

left of the function name. When the keyboard control is active, an "x" appears in the box. You can deactivate any function simply by clicking on the box again. Being able to activate the functions individually allows you to use only the ones you really need, leaving you more keys to play. Keys that have functions assigned to them will not be recorded in the sequence.

using the MIDI keyboard for step editing

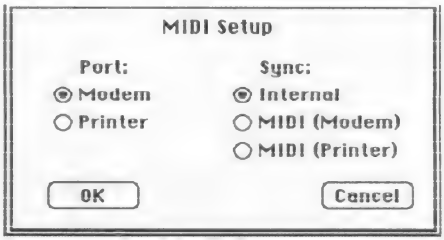
The chapter on the Step Editor describes how to use your MIDI keyboard to insert new notes in the sequence. To activate MIDI keyboard control of the duration of the inserted notes, click on the box next to "Use in Step Input." An "x" will appear in the box indicating that keyboard control of note durations is now active. You can turn it off again by clicking over the box once more.

Then specify which key you wish to use for each duration value by clicking over the box to the right of the corresponding note icon, and then playing the key on your MIDI keyboard, or typing in the pitch letter name and octave number. Using the same method, you can also specify a key to activate the tuplet function, and one to insert a rest equal to the currently selected duration.

Once you've made your keyboard assignments, you must also activate each key separately by clicking over the box to the right of its duration icon. Again, you can deactivate any key by clicking over the box another time. By activating only the keys for the durations you need, you'll save keys for recording music.

configuring your MIDI port setup

The MIDI Setup command lets you choose which Macintosh port your MIDI interface is connected to, and whether Master Tracks Pro uses its own internal clock for sync timing, or follows an external MIDI clock source.



Selecting the command brings up a dialog box that lets you make these choices. Once you've made your changes, click on OK to to enter them and return to the program, or click on Cancel to go back without saving your changes.

assigning MIDI data port

Master Tracks Pro allows you to use either the modem or printer port for your MIDI interface. To do so, simply click on the appropriate circle on the left side of the MIDI Setup dialog box. A smaller solid black circle will appear within the circle when the selection is made.

selecting the timing source

The timing of a Master Tracks Pro sequence can be set by its own internal clock or by an external MIDI clock. If you use an external MIDI source for timing, Master Tracks Pro responds to all MIDI timing messages, including Start, Stop, Continue, Song Pointer, and MIDI clocks.

Only one clock source can be active at a time. To set the sync source to the program's internal clock, click over the circle next to "Internal" on the right side of the MIDI Setup dialog box. If you want to sync the sequence to an external MIDI clock source, click instead on the circle next to one of the two MIDI options in the dialog box. The choice between the two depends on which port you're using for MIDI sync, as described below.

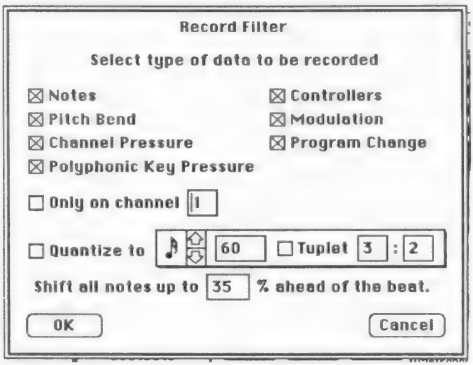
assigning a port for MIDI sync

You can only use one of the Mac's ports for recording and playing MIDI data, and you can use the same port for MIDI sync information if you wish. However, you can use the other port for sync instead by installing a second MIDI interface. This allows you to hook up, say, your master MIDI keyboard to one port and a SMPTE sync box to the other, making a MIDI merger unnecessary.

If you're using a single port for both data and sync information, be sure to select that port on both the Port and Sync settings on the MIDI Setup dialog box. To use separate ports for data and sync, just select the port settings in the dialog box that correspond to the way your system is configured.

using the record filter

Master Tracks Pro can selectively record only the MIDI data you wish, while it filters out any data that you don't want to record. Choose the Record Filter command on the Goodies menu to bring up a dialog box that lets you choose which combination of MIDI data types Master Tracks Pro will record.



With this feature, you can independently select or disable each MIDI data type, including pitch bend, channel pressure (also known as monophonic key pressure or aftertouch), polyphonic key pressure, modulation, program changes, note data, and other MIDI controllers. You can also have the program quantize note timing while you are recording.

As a simple example, you may want to conserve memory by filtering out aftertouch or modulation wheel data (since both of these controllers send data continuously, they can quickly fill up large amounts of your system memory). Filtering out the aftertouch and mod wheel data is a simple matter of deactivating these options on the Record Filter dialog box.

You can choose not to record notes at all, so that you can create a separate track for, say, pitch bend data. That way, you can concentrate on making your pitch bends as accurate as possible. You can choose a single channel that Master Tracks Pro will "listen to" while recording, while it ignores incoming data on other channels. You can also quantize on input as many drum machines do.

changing record filter settings

To change the Record Filter settings, first choose Record Filter on the Goodies menu. In response, the Record Filter dialog box appears.

Each MIDI data type appears in the dialog box with a corresponding box to the left of its name. When an "x" appears in the box, that data type will be recorded. When the box is empty, that data type is disabled, and it will be ignored during recording. You can select or disable any combination of data types you wish. Clicking on the boxes toggles them between the selected and disabled settings.

miscellaneous controllers

The Controllers option in the Record Filter dialog box refers to all miscellaneous MIDI controllers other than the ones specifically listed in the box. Most popular synthesizers respond at most to only a few of these miscellaneous controllers, and many don't recognize anything beyond pitch bend, modulation, and after touch. Consult your synthesizer owner's manual for the numbers of any controllers that your instrument can send or receive.

selecting individual channels on the record filter

Another choice on the Record Filter dialog box, "Only on Channel" allows you to filter out data from all but one MIDI channel when you record. When this setting is active, the box beside it contains an "x". You can deactivate this option by clicking on the box beside so that it is empty, and data from all channels will be recorded.

If you wish to use this option, enter the channel number by clicking on the data box on the right of the option, and then typing in the channel number, from 1 to 16.

quantizing while recording

You can use the option on the Record Filter labeled "Quantize to" to quantize notes while you record them, much as a drum machine does.

Activate this option by clicking in the box next to it. An "x" appears in the box when it is active.

Next, select the resolution for quantization by using the arrow keys to choose the appropriate note duration icon. To quantize to a tuplet resolution, click on the box next to "Tuplet," and enter the tuplet values you wish by clicking on the value boxes and typing in the new numbers. You may also change the percentage value that determines how far

ahead of the beat Master Tracks Pro will reach to quantize a note. (see chap. 10 Quantize)

exiting the record filter

When you're finished making your Record Filter selections, return to the main Master Tracks Pro screen by clicking on OK. Any settings you make in the Record Filter can be saved using the Preferences command in the File menu. To return without entering the changes you made, click on Cancel.

14 Advanced Topics

In this chapter you'll find information about how you can put Master Tracks Pro to work on your most sophisticated musical chores, including looping, punch in recording, MIDI and SMPTE sync, and more.

conductor track settings

The program stores tempo, beat and meter values in a separate "Conductor Track" along with each measure in the score, providing an elegant way of setting up conductor "templates" of meter and tempo changes. These values are stored in the Conductor Track and control how the MIDI data is broken up into measures. Conductor templates can be saved to disk as a score for later use. The vertical grey bar in the Song Editor represents the end of the Conductor Track.

re-barring to remove a beat

The Conductor track can be utilized to remove measures or even a single beat from your sequence. For example, if you have a 4/4 measure in your piece (say measure 6) which you have decided need the last beat removed. Select measure 6 and choose Conductor from the Change Menu. Change the meter of measure 6 from 4/4 to 1/4 time. Now when you return to the Song Editor Window or Step Editor Window you will see 4 measures occupying the space previously taken up by measure 6. This is most graphically depicted in the Step Editor Window. Each of these four new measures now contains only one beat. In the Song Editor Window, Cut the last of these new measures (#9) by selecting it along the measure ruler at the top of the window. Selecting measures in this manner cuts time out of the sequence on all 64 tracks. You can now select the 3 remaining 1/4 measures (#6 - #8) and choose Conductor once again from the Change Menu and rebar those three measures to 3/4 time making them one measure again.

conductor track data window

The Conductor Track Data Window (Command–0) shows a graphic representation of the conductor track. This is intended as a means of viewing the Conductor Track and making "fine tuning " changes. Basic changes to the Conductor Track should be made from the Change menu using the Conductor dialog box. The graphic in the Conductor Track Data Window is scaled to the beat value so that it can be displayed on one screen. So, if the beat value changes from a 1/4 note to an 1/8th note and the tempo is doubled, the graph line will remain constant just as the sound of the music does. A good example of this would be a piece that changes back and forth from 2/4 to 6/8 time where the beat value might change but the tempo stays the same.

Tempo changes are made with the pencil icon in this window and undone with the eraser. Tempo values will always be displayed at each measure boundary. A tempo change that occurs exactly on a measure boundary cannot be erased but can be changed again with the pencil.

looping

Individual tracks can be looped during playback. This feature is especially useful with short repeating sections such as bass or drum parts.

Record the part once, and then edit if necessary. You can trim your loops using the Cut command to get the the proper number of measures to loop. A track ends where there are no more filled or hollow measures present in the Song Editor. For reference, the grey vertical bar in the Song Editor indicates the end of the conductor track.
Turn on the track's loop control and let the part play back. Lay down other parts or even other loops against it by recording on other tracks.

Remember that the loop is only stored in memory once, and always starts at the beginning of the sequence. That means if you start playback past the point of the loop, the track will not playback. That also means if you are copying tracks from one sequence to another it may not be possible to preserve the loops that begin later in the piece. This is the reason to create literal copies of your loops, especially before building songs.

Loops encourage speed and spontaneity in music making and also save memory. Use them to work out your ideas. However, once your song or song section is complete, copy and paste the looped part into the track so that it fills out to the

end of the sequence. This will give you the flexibility of Master Tracks Pro's song structure. This will also let you create subtle variations in the loop each time it plays using the Change menu or other regional editing commands. Once you have copied your looped part you can append as many copies of it as you like by repeatedly selecting Paste or pressing Command-V. The insert point automatically moves to the end of the last paste.

auto paste

looping to the half bar

Master Tracks Pro's Loop feature requires you to loop to the nearest measure but if your phrase ends in the middle of a measure and you want to loop it anyway, it can be accomplished by re-barring the last measure of the track. Let's say you're working in 4/4 time but you want the track to loop a two and a half bar phrase. Select bar 3 (presumably the last bar of the track) and choose Conductor from the Change Menu. Click in the circle next to Set Meter and set the meter to 1/4 time. You will now have 4 measures with one beat each in them in the place of old measure #3 which had four beats in it. Select the last two of these new measures and Cut them.. Your track will now loop the way you want it to.

loading many MIDI devices with a single mouse click

Master Tracks Pro's Sysex feature remembers the MIDI Channel of each message it receives. It will send each message in a file out on the same channel it came in on. Each sysex file stored to disk can have as many as 64 messages (bulk dumps) in it. Most synths, drum machines, and rack mount tone modules send their sysex bulk dumps as one or two messages. So if your system includes MIDI devices that have a selectable Basic Send and Receive channel, you can set each device to a different channel and dump each one consecutively into a Master Tracks Pro Sysex file while the RECEIVE button is highlighted in the Sysex Dialog box. Then SAVE all of this information as one file. (You might want to give it the same name as the sequence it applies to.) When you want to reload all your equipment to play the sequence, just load the Sysex file and click on send and watch each of your MIDI devices receive it's information in turn.

dumping from other sequencers

You may wish to load a sequence created on another older computer or sequencer (that does not support Midi Files) into Master Tracks Pro to take advantage of its advanced features. This is easily accomplished since Master Tracks can record incoming data on all MIDI channels simultaneously. You only need to make one pass, playing all tracks of the sequence with one track on Master Tracks Pro set to record.

After you have transferred the sequence you can use the Strip Data feature to Un - merge the newly recorded track by channel, Pasting data from each MIDI channel onto its own track. To sync the two sequencers together it is recommended that the recording sequencer be the MIDI master and the playing sequencer be the MIDI slave.

editing across windows

The Cut, Copy, Paste, Clear and Mix Data editing commands perform slightly differently depending on which window you are working in.

The Song Editor works with all data types whenever you perform an edit operation. You can work with notes and MIDI data at the same time in the Song Editor.

In the Step Editor, when you cut, copy, or clear, you will only affect the note data on all channels present. In the same way, when you cut, copy, or clear in a MIDI Data window, you will only affect the type of MIDI data in that window.

Keep in mind, however, that the Paste and Mix commands for both the Step Editor and MIDI Data windows will copy **all** data in the clipboard into the sequence, no matter what type or types of data are included.

This scheme lets you strip a particular type of data from a track using Cut or Clear in the Step Editor or MIDI Data Windows without affecting any of the other data in the track. You can also use a track's worth of data collected in the Song Editor and paste or mix it in the Step Editor for MIDI delay (see below).

crescendos decrescendos

Many patches (sounds) on synthesizers and drum machines respond by getting louder with increased velocity settings but some, like organs, do not. The MIDI Volume controller is controller #7. In the Controllers Window, click on the Controller # Box and use the arrows or the keyboard to enter a value of 7. You can now use the pencil icon cursor to enter decreasing (or increasing) values at any spacing or curve you like. Alternatively you can choose Continuous Data from the Change Menu, select the range of measures over which you wish the change to occur, and enter the starting and ending values. IMPORTANT: You must have a controller values entered in the track for Change to work. (There must be something to change.)

building songs

Master Tracks Pro provides up to 9999 measures by 64 tracks of literal track data in which to work provided you have enough memory in your computer. Variations and combinations of two song building techniques give you many ways of building songs from segments without giving up the ability to edit or add additional tracks over the entire length of the song. Using these techniques make it possible to add variation and sweetening to repeating sections and help keep your song organized in a single file.

The first method separates songs into sections within the same long sequence. Build a conductor template and lay out the song structure using markers. You can begin record or play at any point, so you can work on whatever section you like at any time. Leave several blank measures between sections to avoid accidentally erasing anything, and then, using the Cut command, remove the blank measures later when you've finished recording. You can copy and paste between sections at will and your file will save all sections at once.

Another method lets you build songs in a more traditional way by appending different files together from the disk. For example, you could record three separate sequences and save them individually on the disk in separate files called Intro, Verse and Chorus. Open the verse and copy it. Then Open the Intro and paste the Verse onto the end of it. Set markers if you wish and use Save as... to save the new file. Call it Song. Open the Chorus file and copy it. Open the Song file and paste the Chorus at the end of the Verse. You will now have a large Song in memory based on Intro, Verse and Chorus which you can add to and edit further. This Song can also be used as part of another, longer, song.

song list mode

If you have enough memory in your Mac, (a stock Macintosh Plus is good for about 80,000 notes depending on pitch bend, aftertouch, etc.) you can have Master Tracks Pro accompany you (or entertain you) for a list of songs and have precise control of the time between songs. Use the method described above but replace "Intro, Verse, and Chorus" with actual songs. Insert a few blank bars between each song and place markers at the beginning and end of each song. The markers allow you to quickly TAB from song to song. To determine the time between songs, select the inserted blank bars and use the Fit Time command from the Change menu. In performance you can also use "Pause" assigned to your MIDI

keyboard from Keyboard Setup to let you pause between songs and then start up at the right moment.

sequence data structure and ties

Master Tracks Pro stores sequences as groups of tracks and measures along with a separate conductor track. The conductor track determines how data is stored, displayed and played back based on the meter, beat and tempo values stored with each measure. Storing data in measures is not required for MIDI sequencing but becomes more important when you begin to provide sophisticated graphic editing operations as those found in Master Tracks Pro, and when you desire to convert your MIDI sequences to music notation (more about this later).

Ties are a special case of MIDI data and may cause problems for you when you cut and paste across tied notes. Some MIDI events are single events such as Program Change #7 or Sustain Pedal On. Because notes have a certain duration between note on and note off and Master Tracks Pro stores notes in groups of measures, notes that tie across measure "boundarys" are stored internally as notes tied to one another, just as you would with music notation. When you cut across ties (not usually recommended) the ties will automatically be clipped with note on or note off events added so that no notes hang in the sequence or on the clipboard.

sliding tracks

You can delay a track by individual clock ticks (there are 240 clock ticks per quarter note) by first Cutting or Copying the track in the Song editor. Then paste the clipboard into a blank track using the Step Editor, selecting the amount of MIDI delay by positioning the insertion point with the Arrow cursor. This will delay all the MIDI data including notes in the track by the number of clock ticks or beats corresponding to your insertion point.

Another way to produce MIDI delay or even MIDI PRE- Delay is with the slide notes feature in the Quantize Dialog Box from the Change Menu. You can experiment with different values for the number of clocks until you get something that does the job. If you wish to offset start times without quantizing, click in the quantize box to remove the "x" in it.

MIDI delay can be used to "fatten up" a track's sound by playing two tracks together to separate channels slightly delayed. More radical delays or offsets can be achieved using

the song editor to delay tracks by measures using cut and paste. Rounds or echoing effects can be easily done and undone until you have something you like.

MIDI Sync Song Pointer

Master Tracks Pro generates its own internal time base when sync is set to Internal in MIDI Setup using a resolution of 240 clock ticks per quarter note. It will send out MIDI timing messages, including Song Pointer, Start, Continue, MIDI clocks, and Stop corresponding to the Transport activity. For example, whenever you move the Transport to a new location in the sequence, a corresponding MIDI Song Pointer message is sent out.

SMPTE

If Sync is set to MIDI in the MIDI Setup, the program accepts the timebase reference from an external MIDI source and interpolates 240 clocks per quarter note based on the incoming MIDI clock rate. It will receive and autolocate to MIDI Song Pointer when in MIDI Sync mode. Using MIDI Sync mode with an external SMPTE-to-MIDI sync device such as Roland SBX-80, Fostex 4050, Garfield Master Beat, Cooper PPS-1 and others, you can sync Master Tracks Pro to SMPTE. Connect the MIDI out of the external sync box to the MIDI in of your Macintosh MIDI interface and connect the interface to either the Modem port or the Printer port. Select MIDI Setup from the Goodies Menu and configure the setup so it matches your interface connections. A typical setup might have the Master Keyboard / Controller connected to the Modem port and the external sync box connected to the Printer port. In this case, you should select "Modem" for Port, and MIDI (Printer) for Sync. You can now record new tracks while Master Tracks Pro runs in sync with your SMPTE striped video or audio tape. If your external sync box supports MIDI Song Pointer, Master Tracks Pro will "chase" the tape transport and start anywhere in the piece. If your external sync box has Tempo Mapping capability, you can create a tempo map that duplicates your conductor track settings. When synced to MIDI or SMPTE, the Conductor Track becomes unnecessary since the Tempo map should be coming from the SMPTE to MIDI converter. When used in this application, leave the Conductor set to 4/4 bars with quarter note beats.

transposing drum patterns

Master Tracks Pro's Strip Data feature makes this easy. You'll need to know what MIDI note numbers the two drum machines each respond to. You can learn this from the owners manual or by playing each machine with your MIDI keyboard (using Thru on Master Tracks Pro) until you have noted which key corresponds to which drum. Let's take a Yamaha RX snare #1 and convert it to a Roland 707 snare #1. First, we strip the snare out of the Yamaha drum track by clicking the box next to "Notes" and the circle next to "Only notes between" in the Strip Data dialog box from the Change Menu and entering E2 (the note assigned to Yamaha's snare #1) in both note value boxes. Choose Cut if you wish to remove the snare permanently from the drum track and Copy if you want to leave it in. Place the cursor on bar #1 of an empty track and Paste. Select the entire new track and choose Transpose from the Change Menu. In the first note value box enter E2 (from your MIDI keyboard or the Mac) and in the second box, enter D1 (Roland's note assignment for snare #1). Do this with each drum to complete the transition. You can then Mix back down to one track if you wish or keep independent control of each drum for further editing.

printing the active window

You can print the active window at any time from within Master Tracks Pro. This is a feature that lets you easily document your compositions, default settings and other dialog box settings.

You can print the active window (the one you're working in) by simply pressing Command-Shift-4. Make sure your printer is hooked up and turned on and if you are using your work copy, be sure the printer icon is in the System Folder.

notepad

Master Tracks Pro has 64 tracks on which to record. Most people use only 16 to 30 of them most of the time. This leaves a lot of empty space that can be used for making notes about your work. Just scroll down to an unused area in the Sequencer Window, click in a Track Name field and jot down whatever you like, perhaps information about the patches used and the associated sysex file.

memory management

The memory window (selected from the Goodies menu) tells you how much memory your score takes up, how much memory is being used by the clipboard and how much memory is available for more notes. You can clear the clipboard memory by copying or cutting a blank measure. This frees up additional memory for the score. If any DAs are running, closing them may also free up additional memory.

The smaller your System is (the fewer DAs and Fonts that are installed with the Font/DA Mover), the more available memory you will have when you use Master Tracks Pro.

using Switcher

Master Tracks Pro™ is compatible with Apple's Switcher program, however it is recomended that you select Options from the Switcher menu and check the box next to "Disable Keyboard Switching". This will eliminate interference with Master Tracks Pro's Zoom In / Out Keyboard commands.

using Multifinder

Master Tracks Pro™ is also compatible with Apple's MultiFinder which is included with Apple's System Software starting with System 4.2. When Master Tracks Pro™ is running under MultiFinder, it will automatically stop what it is doing when you "click out" to another application and wait for you to return whereupon it will resume it's activity. If a sequence is playing and you hold down the Shift key while you "click out", the sequence will continue to play while you work in another application although tempo may vary during disk access.

a typical scenario

You are fortunate enough to land a gig doing the score for a 30 second commercial. The producer informs you that there will be a 5 second voice only opening and another 5 seconds of voice only for the closing so your music must be exactly 20 seconds long. You accomplish this task effortlessly using Master Tracks Pro and arrive at the recording studio ready to lay down your sequenced tracks to tape. "There's been a slight change" the producer informs you. "The opening voice segment is now 6 seconds long but the entire thing must still be 30 seconds..... OK?" No problem! Just use Fit Time to make the blank measures at the start of the piece fit to 6 seconds and then select the 20 second music section and use Fit Time to fit it to 19 seconds to give the producer exactly what he wants.

SUMMARY OF KEYBOARD COMMANDS

TRANSPORT COMMANDS

Space Bar	Start and Stop Transport
Enter Key	Record
Tab Key	Move to next Marker
Shift-Tab	Move to previous Marker

GENERAL COMMANDS

Return	Enters a rest in Step Entry mode
Backspace	Clears selected area in Song ,Step, and Midi Data Windows. Deletes last note entered in Step Entry Mode.
Numbers 3 - 0	Change measure ruler display values
+, -	Change numbering from odd to even display

WINDOW COMMANDS

Command - 1	Sequencer Window
Command - 2	Song Editor Window
Command - 3	Step Editor Window
Command - 4	Pitch Bend Window
Command - 5	Channel Pressure (Aftertouch) Window
Command - 6	Key Pressure (Polyphonic) Window
Command - 7	Modulation Window
Command - 8	Controller Window (all other Controllers)
Command - 9	Program Change Window
Command - 0	Conductor Track Data Window

FILE COMMANDS

Command - N	Start with new sequence
Command - O	Open sequence from disk
Command - S	Save current sequence to disk
Command - Q	Quit Master Tracks Pro™

EDIT COMMANDS

Command - Z	Undo last edit or change operation
Command - X	Cut
Command - C	Copy
Command - V	Paste
Command - M	Mix
Command - I	Insert measure

Command - A	Select All
Clear	Cancels a dialog box

STEP EDIT WINDOW COMMANDS

Option – P	Toggles Play / Mute current track
Option – R	Toggles Record On / Off current track
Option – S	Toggles Solo On / Off current track
Option – L	Toggles Loop On / Off current track

LAYOUT COMMANDS

Command -[	Zoom In
Command -]	Zoom Out

GOODIES COMMANDS

Command - K	Keyboard setup
Command - R	Record Filter

In any Midi Data Window, pressing any key except Space bar, Return, Enter, Tab, Backspace, or Clear will toggle between a dotted line graph and a filled graph of any Midi data which is present.

controller listing

MOST COMMONLY USED MIDI CONTROLLERS

CONTROLLER #1	MODULATION WHEEL
CONTROLLER #2	BREATH CONTROLLER
CONTROLLER #4	FOOT MODULATION
CONTROLLER #5	PORTAMENTO TIME
CONTROLLER #6	DATA ENTRY SLIDER
CONTROLLER #7	MAIN VOLUME
CONTROLLER #8	BALANCE
CONTROLLER #10	PAN
CONTROLLER #64	SUSTAIN (DAMPER PEDAL)
CONTROLLER #65	PORTAMENTO
CONTROLLER #66	SOSTENUTO (MIDDLE PEDAL)
CONTROLLER #67	SOFT PEDAL
CONTROLLER #92	TREMELO DEPTH
CONTROLLER #93	CHORUS DEPTH
CONTROLLER #94	CELESTE (DETUNE) DEPTH
CONTROLLER #95	PHASER DEPTH
CONTROLLER #96	DATA INCREMENT
CONTROLLER #97	DATA DECREMENT
CONTROLLER #122	LOCAL CONTROL (OFF=0, ON=127)
CONTROLLER #123	ALL NOTES OFF
CONTROLLER #124	OMNI MODE OFF
CONTROLLER #125	OMNI MODE ON
CONTROLLER #126	MONO MODE ON
CONTROLLER #127	POLY MODE ON

Our Warranty Plan

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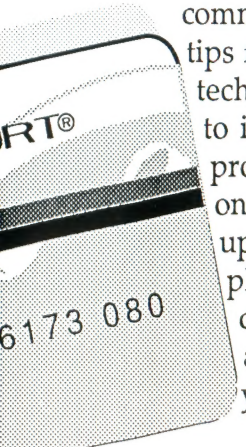

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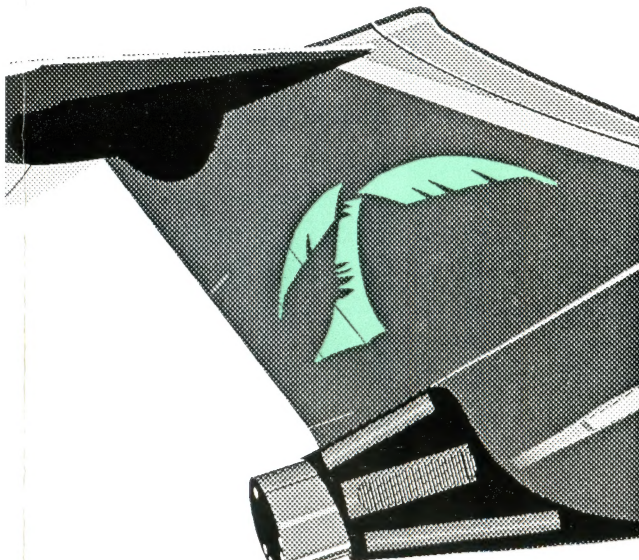

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Club Passport is an exclusive user group for people who have purchased Passport software and hardware products. The club provides numerous services designed to inform you and to save you money.

Through a combination of newsletters, on-line information, upgrade discounts, enhanced warranty protection and other benefits, Club Passport can put a world of musical information at your fingertips.

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